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"Community Consultation" on Child Health Practices in Timor-Leste

Ministério da Saúde

TAIS
Timor-Leste Asisténsia Integradu Saúde

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List of Acronyms

ANC	Antenatal Care
BCC	Behavior Change Communication
BCG	Bacillus Calmette-Guerin
BF	Breast feeding
BFH	Baby Friendly Hospital
CC	Community Consultation
CHC	Clinic Health Center
CCF	Christian Children Fund
DHS	District Health Services
DGLV	Dark green leafy vegetables
IDI	In-Depth Interviews
IEC	Information Education Communication
IYCF	Infant and Young Child Feeding
HAI	Health Alliance International
LISIO	Livrinho Saude Inan no Oan
MCH	Maternal and Child Health
MoH	Ministry of Health
MSG	Monosodium Glutamate
MSG	Mother Support Groups
OPV	Oral Polio Vaccine
ORS	Oral Rehydration Solution
TAIS	Timor Leste Asistensia Integradu Saude
TBA	Traditional Birth Attendant
TIPs	Trials of Improved Practices
TT	Tetanus Toxoid
NGO	Non Governmental Organization
SHARE	Services for the Health in Asia and Africa Region
SODIS	Solar Disinfection
UNICEF	United Nations Children Fund
USAID	United States Agency for International Development

Executive Summary

Between January and July 2007, TAIS, in collaboration with the Ministry of Health and several other partners, undertook a community consultation exercise to learn more about key preventive and care-seeking health practices related to child health. This activity built on information learned in a situational assessment (literature search plus key informant interviews) completed in 2006. The community consultation consisted of eight focus group discussions (FGDs) on the context of behavior change (mothers' tasks, schedules, independence, as well as a bit about the nature of communities and communication opportunities) in five districts, followed by in-depth interviews and trials of improved practices (TIPs) in 13 communities in Ermera and Bobonaro districts. In the TIPs, mothers were asked to try out new, improved practices for a trial period, after which the interviewers returned to get feedback on what people did, their perceived benefits and difficulties, etc.

The following table summarizes the key practices studied, the main findings, and the community consultation team's analysis of appropriate next steps. These next steps should be considered as ideas for discussion with the Ministry of Health and other partners working to improve child health in Timor-Leste.

Synopsis of the Community Consultation

Desired practices studied	What we learned	Possible Next Steps
Make a birth plan	►People don't make plans ►Most mothers prefer to deliver at home and plan on going to a health facility if complications arise; they have vague plans on how they will be transported.	►Develop a birth plan format and test it in one of two communities to learn if people are willing and able to make and follow specific plans. ►Encourage leaders and existing groups in communities to develop a general plan for emergency transportation and contact points for obstetrical and other emergencies. ►As part of birth planning process, teach families to recognize, and motivate them to act on, maternal danger signs.
Deliver with a skilled attendant	►Most women have a strong preference to deliver at home. ►Skilled attendance at home is definitely more feasible than skilled attendance at a health facility, since there are very strong cultural traditions around home births and postpartum traditions at home.	►Encourage mothers to deliver with a skilled attendant, preferably in a facility, but at home if family refuses a facility birth. ►Take steps to improve the attitudes and interpersonal skills and treatment by nurses and midwives. ►Address the issue of transportation costs for midwives.
Make at least four antenatal visits	►Most mothers do go for a few antenatal (ANC) visits, although the practice depends much on their access to services. ►Women seem to desire or at least accept tetanus toxoid immunization and iron tablets and	►Promote several antenatal visits, with an emphasis on an early visit as soon as the woman knows she is pregnant. ►In communities with poor access to a facility, provide occasional prenatal care via outreach. ►Train providers to counsel on iron

	want to know the baby's position. ►Women report being admonished or turned away at health facilities because they went to the wrong facility or on the wrong date.	tablet compliance, nutrition and danger signs; to treat women with respect; and to keep more complete records (e.g. of tetanus toxoid shots). ►Clarify MOH rules regarding which facilities people can use and disseminate correct information to health staff and the public.
Breastfeed exclusively for six months	►Immediate initiation of breastfeeding (BF)/ feeding colostrum is not traditional in some areas and not done by many mothers, although it appears that most will accept this practice when it is carefully explained by health professionals. ►Wet nursing is common, at least in Bobonaro. ►Exclusive, or at least predominant, BF appears to be practiced by the majority of mothers for 3 or 4 months, when most consider that breast milk alone is insufficient (because babies cry and are perceived to be hungry). ►Mothers do not understand that the more the baby feeds, the more milk is produced. ►Most mothers feed on demand, whenever the baby wants, many times, but for very short periods, day and night. In trials, mothers could feed longer each time and noted clear advantages. ►Mothers do not seem to feel a strong need to supplement with water, but formula and bottle feeding is a growing threat where they are accessible and affordable.	►Promote immediate BF/feeding colostrum (before the delivery of the placenta and first bath). ►Strongly discourage prelacteal feeds. ►Behavior Change Communication (BCC) should focus on the meaning and importance of exclusive breastfeeding; on giving longer breastfeeds and the benefits of longer feeds for both baby and mother; on bad consequences of formula if it is not prepared with clean water; on the hygiene issues with using a bottle; and that using a bottle make the way a baby suckles the breast less efficient or effective. ►Community promoters/groups should promote exclusive BF and help treat or refer BF problems. ►Train community promoters to identify breastfeeding problems and to know when to refer the mother to a clinic – as in the Mother Support Group model.
Give adequate complementary feeding from about 6-24 months with continued breastfeeding for at least two years	►Most mothers initiate complementary foods too early (at 3 or 4 months). ►Too much complementary food that is given is watery rice gruel or similar liquids that fill the stomach but are not calorie-dense. ► Most mothers feed insufficient quantities at each meal, and some believe that children are not able to eat more. 24-hour food recalls confirmed that the volume of food and caloric intake are low. ►Although food insecurity is definitely present, some healthy foods are normally available– such as pumpkins and dark-green leafy	►BCC should focus on adding oil and healthy foods to thin gruels; feeding larger quantities each time; using free or cheap healthy foods; the dangers of using formula and bottle-feeding (and benefits of cup and spoon instead). ►Community volunteers/mother support groups should intensify promotion of good child feeding through counseling, group discussions, food demonstrations, recipe contests, etc. ►Health professionals should counsel on BF for 2 years, even if the mother becomes pregnant. Reversing this strong traditional belief will take time. ►Legislation to implement the International Code on Marketing of

	vegetables (DGLVs). ►Many women do not breastfeed for the recommended two years; most mothers stop breastfeeding when they become pregnant. ►Formula and bottle-feeding are not the norm but are a growing threat as accessibility grows.	Breast Milk Substitutes needs to be passed AND enforced. This is urgent before company marketing grows further.
Give appropriate nutritional care of sick and severely malnourished children	►When a child is sick, mothers tend to give more breast milk and reduce other foods and liquids. ►In FGDs, mothers said that breast milk is sometimes the cause of child illness and therefore should be ceased when the child becomes ill.	►Regardless of the contradictory information on beliefs and practices, BCC should promote the importance of continued BF and other safe feeding during illness, along with extra patience and persistence in feeding a sick child. ►BCC should promote adding oil and extra food in the 10 days following an illness.
Ensure adequate iron intake for yourself and young children	►Although this was not studied in detail, mothers' general attitudes towards iron supplementation in pregnancy seem positive, and some mentioned how the iron made them feel better.	►Community-based promoters and groups should promote ANC and iron. ►Health professionals should be trained to counsel on iron tablet adherence. ►There should be an assessment of tablet supply in facilities and corrective actions taken if needed.
Minimize the exposure of babies and young children to smoke	►To protect mothers and newborns, sitting fire and/or staying at home postpartum are practiced for one week to a few months, with some variations by district. Sitting fire is not practiced as frequently in Bobonaro as in other districts. ►Some mothers will accept staying warm in the home but without sitting next to a smoky fire. ►Trials indicate that changing this practice is possible, but progress will be slow and uneven.	► BCC should address the dangers of exposing newborns to excessive smoke. ►Traditional leaders/grandmothers should be consulted to learn if there are acceptable alternative ways to keep the mother and newborn safe and warm.
Treat mild illness at home and look for danger signs	►Although mothers and families have a good general understanding of child health danger signs, they lack knowledge of when a specific symptom should trigger immediate care-seeking. ►Home treatment of common symptoms is universal. Although these traditional remedies appear to be either helpful or not harmful, using them may delay care-seeking.	►BCC should encourage traditional treatments that are helpful, while reminding families of the need for immediate care-seeking when a danger sign appears. ►BCC should focus on specific danger signs and on the importance of acting immediately.
Take a child with one or more danger signs immediately to a trained health provider	►Families use and have confidence in treatments (i.e. medicine) in health facilities, although they are not completely happy with the manner in which health staff treat them. ►Families in more remote	►BCC should focus on specific danger signs and on the importance of acting immediately. ►Improve/expand outreach to remote, populated areas. ►Rules regarding which facilities people can use need to be clarified and

	communities delay care-seeking longer. ►There appear to be some cases in which parents do not bring ill children for treatment –because of fatalism. ►Some mothers believe they cannot go to the closest facility if it is in another administrative area.	disseminated.
Wash hands with soap and water after going to the bathroom or contacting feces, and before eating, feeding or cooking	►Because of cultural practices, fecal contamination of hands is probably the major route of transmission of diarrhea germs. ►Most people wash hands irregularly and most often without soap, despite knowing about hand washing with soap. ►Affordable soap is available to most people, but most are not motivated to buy and use it for hands.	►It is important to promote hand washing with soap, although it appears to be a "tough sell." ►A good next step would be to attempt to identify "positive deviant" families that do regularly wash hand with soap and to learn from them why and how.
Safely dispose of the feces of all family members	►Most families appear to have some type of latrine, and adults normally use them when at home. ►Children defecate on the ground in or outside the home, and dogs or pigs normally consume feces. ►After defecation, people clean themselves and children with their hands, with or without water. ►Using potties with ash for children at night was well accepted in trials.	►BCC should focus on all adults and children over 5 using latrines consistently. ►Promote potties for night use by children. ►Promote hand washing with soap especially after contact with feces.
Treat water you are about to drink or use for cooking	►Most families boil drinking (but not cooking) water; boiled water is normally consumed by young children and usually, but not always, by adults. ►Water storage is normally in covered containers but contamination may be introduced during retrieval (using cups). ►Solar Disinfection (SODIS) was tested and seems a good alternative for some families, but not most because of the cost of bottles.	►BCC should focus on everyone always drinking treated water; and on safe retrieval of water from the container. ►Conduct additional trials on using SODIS at the community level.
Bring children to immunization service delivery points at the ages (and with the correct intervals	►General attitudes towards immunization are positive. ►People understand the general concept that immunization prevents disease (except in one very remote community). ►Mothers usually ask husbands' permission to take the child, and it is normally given.	►The focus should be on protecting children closer to the ideal schedule. Possible actions include: -Organizing community tracking systems to remind and motivate families when a vaccination is due -Training health staff to improve their counseling on immunization -Increasing the amount and reliability of

between doses) in the national schedule	►All respondents understood that mild side effects are normal. ►The first immunizations are often delayed until a month or more because of the custom of staying at home postpartum. ►It is unclear how aware people are of when they need to return for subsequent vaccinations. ►There seems to be a problem with families misplacing their LISIOs and with young children destroying them.	outreach sessions. -Clarify MOH regulations about which facilities people can use based on their residence & disseminate correct information to health staff and the public. ►Suggest that families pin the LISIO's high on the wall; and/or provide a reminder material that includes a pouch for the LISIO and other important documents

Background to the "Community Consultation"

TAIS is a USAID-funded health project that supports the Ministry of Health, primarily at the district and local level, (1) to improve its ability to plan, monitor and improve service quality, coverage and effectiveness as well as (2) to expand the public's appropriate use of preventive and curative services and improved preventive and promotive practices in homes and communities. TAIS's assessment is that health promotion in Timor-Leste primarily takes a didactic approach, with health personnel and trained community volunteers providing information to people on the causes of health problems and what they need to do to prevent or cure them. TAIS believes that an approach to health promotion based on behavior-change principles, rather than only giving people information, will be more effective. Such a behavior-change approach differs from "business as usual" in the following ways:

- It does not automatically recommend that everyone do internationally defined "ideal" behaviors, because it realizes that many people cannot. Rather it recognizes the need to recommend what is feasible for people in their contexts, so it accepts "improved" but not necessarily "ideal" behaviors.
- Because it considers behavior change as a process that often takes time, it encourages people to move at their own pace small, feasible steps towards ideal behaviors.
- Its recommendations are based on internationally-proven behaviors but also on in-depth formative research with families and persons who influence them, in order to learn what behaviors are both acceptable and feasible for people.
- It identifies people's main barriers and motivations (from the families' viewpoint) and focuses on reducing barriers and utilizing the strongest motivations.
- It does not expect that everyone will do the same thing, but rather, when possible, relies on individual or small-group negotiation/problem-solving, so that behavior-change becomes a collaborative process between families and their supporters.

Earlier in 2006, TAIS completed a situational assessment of key child health behaviors in Timor-Leste. This consisted of a literature review and key informant interviews. The situational assessment identified gaps in knowledge about child health behaviors and laid the groundwork for the next step of behavior change program planning.

Between January and July 2007, TAIS, in collaboration with the Ministry of Health and several other partners, undertook a "community consultation" (CC) exercise to learn more about key preventive and care-seeking health practices related to child health. The CC consisted of eight focus group discussions (FGDs) on the context of behavior change (mothers' tasks, schedules, independence, as well as the nature of communities and communication opportunities) in five districts, followed by in-depth interviews (IDIs) and trials of improved practices (TIPs) in 13 communities in Ermera and Bobonaro districts. In the TIPs, mothers were asked to try out new, improved practices for a trial period, after which the interviewers returned to get feedback on what people did, their perceived benefit and difficulties, etc.

TIPs is an action research method that helps to determine what new or modified practices are acceptable and feasible, and people's perceived benefits, problems, and motivations. In the community consultation in Timor, each trial consisted of two interviews.

The first interview was to:

- Explain the activity and obtain the person's consent to participate
- Learn about the person's current practices and perceptions
- Propose and discuss one or more new behaviors for them to try during the trial period
- Learn what practices they are willing or not willing to try and why
- Reach agreement on what the person will try and when the TAIS team would return for a follow-up interview.

In the second (follow-up) interview, the teams learned:

- What the TIPs participants did or did not do with regard to the new behaviors, and how they felt about the experience
- What was easy and what was difficult
- What motivated them and what, if any, benefits they derived
- What problems they encountered and how they responded
- What (if any) discussions they had with other people, what was said, and how others influenced them
- Their intention to continue the new practice
- How they would advise a friend to adopt the new practice

TIPs has been used for program planning in at least 20 countries, and has also been adapted for program implementation in various countries. (A paper on experiences with TIPs is available on request from TAIS -- "Trials of Improved Practices (TIPs): Giving Participants a Voice in Program Design").

Objectives

The objectives of the CC was to fill in gaps in the understanding of current, key child health behaviors in Timor-Leste and to test with families the acceptability and feasibility of new, improved behaviors, using the TIPs method. *Acceptability* gauges whether people are willing to try to do different practices. *Feasibility* gauges whether they are able to change their practices in ways that are better for health and nutrition. More specifically, this CC aimed to enable TAIS, the MOH, and other interested organizations to learn more about the following.

The specific health practices of interest included:

- Hand washing, treatment and storage of water for drinking and cooking, disposal of feces (diarrhea prevention)
- Immunization
- Illness recognition and evaluation, treatment of sick children and care seeking behaviors
- Use of antenatal and postnatal care
- Birthing and postpartum practices
- Breastfeeding practices, including immediate and exclusive breastfeeding

- Complementary feeding practices, including introduction of complementary foods, quality and quantity of foods given

For all practices, the CC sought to learn about the roles of family and community influencers on practices related to child health and nutrition.

The initial plan was to also explore health providers' practices related to treatment of and communication with clients (through observations, in-depth interviews, and TIPs), but this component was postponed in order to keep the activity manageable.

Methods and Participants

The CC, conducted between January and June 2007, consisted of a series of focus group discussions (FGDs), followed by in-depth interviews (IDIs) and TIPs.

Focus Group Discussions

Eight FGDs were conducted within existing community groups in 5 districts: Baucau, Aileu, Manatutu, Manufahi, and Dili from February to March 2007. Each FGD was conducted in Tetum by one Timorese facilitator and one note-taker. In all cases, there were one or two foreigners (*malae*) present, in order ensure that all topics were covered and that topics were probed when necessary. At the same time, it was important to minimize the role of *malae* in order to encourage free discussion, as many of the FGDs were conducted with rural participants who were unaccustomed to *malae* presence. Each FGD consisted of 12 to 22 participants, and was conducted with existing community groups. Table 1 describes the FGD composition, based on access to health services, family roles, and mothers' age. More details about FGD methods, experiences, and findings are available in the detailed report of that activity (see Annex 1).

Table 1. Description of FGD Communities and Participants

Location► *Access►* *Family Role▼*	**Cribas, Manatutu** ***Good Access***	**Metinaro, Dili** ***Good Access***	**Umamuli, Manufahi** ***Good Access***	**Lehane, Dili** ***Good Access***	**Uabubu, Baucau** ***Poor access***	**Fahisoi, Aileu** ***Poor Access***	**Namusoi, Baucau** ***Poor Access***	**Fatulia, Baucau** ***Poor Access***	**Totals**
Young Mothers		X	X					X	3
Older Mothers						X	X		2
Grand-mothers					X				1
Fathers				X					1
Mixed	X								1
									8

In-depth Interviews and TIPs

To conduct in-depth interviews and TIPs, TAIS recruited and trained 16 people in the relevant technical topics and specific skills for qualitative research and how to conduct TIPs. Four trainees were TAIS staff, six were staff of local NGO partners, and six were recruited specifically for the community consultation. Annex 2 describes the roles of the CC team members.

Sampling and Locations

Trainees were divided into two teams according to their interests – the health team conducted the CC in Ermera district and the nutrition team conducted the CC in Bobonaro district.

Within each district, three sub-districts and six *sucos* (1 to 3 sucos per sub-district in each of the 3 sub-districts) were purposively selected to represent the geographic, ecological, cultural, and health-service-access diversity of the district. Within each suco, one aldeia was randomly selected as a starting point for recruiting participants. If an adequate number of participants could not be recruited from the selected aldeia, then the teams continued recruitment and selection in the closest adjacent aldeia. In Bobonaro, an additional sub-district and suco (Ritabou) were selected (convenience sample) during the course of the fieldwork due to a temporary security concern in one of the previously selected sucos. Table 2 summarizes the location and characteristics of participants in the CC.

Table 2. Participants by Location and Key Characteristics

Health Team, Ermera District					
Participant Group► Location (sub-district and suco)▼	*Mothers of under-fives (Diarrhea)*	*Mothers of under-fives (Immunization)*	*Fathers*	*Grandmothers*	*Community Leaders*
Ermera sub-district					
Talimoro	2	2	2	2	2
Hatolia sub-district					
Mau Ubu	2	2	1	1	1
Hatolia	2	2	2	2	2
Aileo	2	2	1	1	1
Letefoho sub-district					
Haupo	2	2	2	2	2
Ducrai	2	2	1	1	1
TOTAL HEALTH PARTICIPANTS (51)	**12**	**12**	**9**	**9**	**9**

Nutrition Team, Bobonaro District					
Participant Group► Location (sub-district and suco)▼	*Pregnant women*	*Mothers of 0-5 mo. olds*	*Mothers of 6-8 mo. olds*	*Mothers of 9-11 mo. olds*	*Mothers of 12-23 mo. olds*
Bobonaro sub-district					
Ai-Assa	1	2	2	2	2
Bobonaro	0	1	1	0	0
Cailaco sub-district					
Manapa	1	1	1	1	1
Perugua	2	2	2	2	2
Maliana sub-district					
Ritabou	2	0	0	1	1
Balibo sub-district					
Leolima	1	1	1	1	1
Batugade	2	2	2	2	2
TOTAL NUTRITION PARTICIPANTS (45)	**9**	**9**	**9**	**9**	**9**

In Ermera district, there were a total of 51 participants in the CC for health. Mothers of under-fives (but not fathers, grandmothers, or community leaders) also participated in follow-up interviews for TIPs. Therefore, there were a total of 75 interviews in Ermera district (51 first interviews and 24 follow-up interviews). All communities where in-depth interviews and TIPs were conducted are in agricultural areas. The majority of families receive money from selling their vegetables and picking coffee. The majority of respondents said that they consume part of their produce and sell the remainder. A few respondents in villages earned money as teachers or drivers of local transport, although in these rare cases other members of the family also planted crops. Annex 3 summarizes the TIPs results in Ermera.

In Bobonaro district, there were a total of 45 participants in the CC for nutrition. All participants were interviewed twice as part of the TIPs process. Therefore, there were a total of 90 interviews. Bobonaro is located in the west of East Timor, bordering Indonesia. Most women interviewed within the interior of Bobonaro were engaged in agriculture. Those in the coastal areas of Batugade had more administrative opportunities or relied on fishing for income. Highland areas (including the sucos of Ai Assa and Bobonaro) have a cooler climate due to their elevation. Maliana, the capital of Bobonaro district, has a fairly well structured administrative service. Some villages are not accessible by car in the rainy season. Annex 4 summarizes the TIPs results in Bobonaro.

The initial plan was to carry out community consultations in two eastern districts and two western districts, but this was modified due to political disturbances and to keep the activity more manageable. Nonetheless, it would be a useful exercise to carry out some validation discussions in the east to try to gauge the extent to which the findings are applicable there.

Findings and Possible Follow-up

This section integrates findings from the FGDs, in-depth interviews, and TIPs. Behavioral analyses based on these findings can be found in Annex 5.

Pregnancy, Antenatal Care, and Delivery

Findings in this section are based on IDI/TIPs with pregnant women (9 women) and mothers of 0-5 month old children (9 women), and FGDs.

Antenatal Care (ANC)

Most women interviewed are seeking prenatal care at least three or four times in each pregnancy. In two cases women had not accessed antenatal care: one woman lived at least four hours walk from nearest health post, and another lived very close to Maliana. Both women distrusted the health services and had low expectations of how they would be treated. One woman had witnessed what she perceived as poor care by a midwife during her sister's labor. She said that midwives were dangerous because her sister's baby had died under a midwife's care in Maliana Hospital. The other woman was concerned that because she was over eight months pregnant, the midwife would shout at her for being irresponsible and not coming for a check-up sooner. A lot

of women who had received ANC did state that privacy was an issue for them - they did not like being touched or asked to undress in front of health staff.

Most women interviewed attended ANC regularly, even monthly, and followed their scheduled appointments. They received iron tablets and tetanus toxoid vaccinations and had the babies' position checked and weight recorded. Sometimes the midwife was not at the clinic when they went. A lot of women stated that they liked ANC because it reassured them about the progress of their pregnancy and that they "learnt a lot from the midwife." Most women appeared to be taking iron tablets, although not necessarily regularly, and believed that the tablets stopped them from feeling dizzy. Some women thought that iron tablets helped make the baby grow big, but nobody stated that this was a concern for them. One woman was not taking iron tablets, and she agreed to go to the clinic and get iron tablets. In the return interview, she said that she had done this and was taking iron tablets.

Many women mentioned that during pregnancy they also visited a "*daia*" or TBA (1) for massage and medicines if they were having pain, for example, unusual abdominal pain as well as (2) regular antenatal check-ups. For concerns between check-ups, it appears most common for women to go to a traditional healer, perhaps because they are deterred from attending the clinic if it "was not their turn." A few women mentioned being turned away from antenatal check-ups if they did not go at the time of their next appointment.

The FGDs revealed that that wives and husbands decide together about antenatal care – but that women do not necessarily need permission from husbands, mothers-in-law or mothers to seek ANC.

Although most women attend ANC, few are persuaded to have institutionalized births or births with professional midwives. *Not one pregnant women interviewed had the intention of birthing in a hospital or clinic.* One woman mentioned that if the clinic were closer she might have birthed there. *Only one woman with a baby 0 – 5 months had birthed intentionally in an institution*. The two births that took place at the Balibo and Maliana hospitals were due to complications during labor: one woman had a breech birth, with twins, and the other was an admission after the delivery with the complication of a retained placenta.

Discussion and Possible Follow-up

Despite fairly high ANC attendance, few women desire to give birth in a health facility. The MoH currently promotes only institutional births. Some mothers would accept home births attended by skilled providers, but this would require someone paying for midwives' transportation costs.

From the women's viewpoint, ANC could be improved. Health facilities could be encouraged to provide more privacy to women. Providers could be better trained to counsel on iron tablet compliance, nutrition and danger signs; to treat women with respect; and to keep more complete records (e.g. of TT shots). Community-based promoters and groups could also promote ANC and adherence to taking iron tablets.

Birth Planning

Women and/or families do not make explicit birth plans. When questioned about what they would do in the event of an emergency, all stated that they would call for an ambulance, call for a midwife or try to go to the hospital. Most men responded to this question on behalf of their

wives. The men stated that it was really difficult if an emergency happened because it was hard to telephone, some health posts were not staffed with a midwife, and it was expensive to call and pay for an ambulance, which would require that they sell something. One couple stated that they would go to the nearby health post, where they knew there was no midwife, before going to the hospital in Maliana (equally as far), where there is a midwife, because this was the system in their District Health Service (DHS). If they went to Maliana hospital first, the midwife would be angry with them. Upsetting the midwife appears to be of more concern to them than the fact that the pregnant women and her baby might be in extreme danger. Two women were given the recommendation to discuss making a birth plan with their family. One woman had not delivered but she still had the intention to follow a birth plan.

Women's husbands seem to be gatekeepers regarding going to a health facility for a routine birth or emergency. Most men answered on behalf of their wives with regard to birth planning and about what to do in the event of an emergency.

Discussion and Possible Follow-up

Health programs could encourage families to make simple birth plans and could also work with community leaders and groups to encourage a community emergency medical transportation plan. As part of the birth planning process, programs should teach families to recognize maternal danger signs and motivate them to seek care as soon as one is noticed.

Maternal Diet during Pregnancy

These interviews did not reveal any food taboos during pregnancy or the apparent avoiding of protein-rich food to reduce weight gain, as found in the HAI studies. Most women said they could eat anything, and most women felt happy with their weight gain. Some women associated receiving iron tablets as "helping make the baby bigger," but this did not appear to deter them from taking the tablets.

Birthing Practices

All pregnant women interviewed believe it is better to have the baby in the home with the assistance of family members, mostly because this was what they, their mothers, and grandmothers had always done. The familiarity of birthing at home seems to reassure them that this is a safe practice. Most women stated that they were more comfortable at home and that their family could help. In addition, the ritualistic washing practice by the grandmother and the cutting of the umbilical cord appear to be major influences on birthing in the home. The traditional practice of 'sit fire' or staying inside the home for a week or up to two months, in this district, to avoid the baby getting cold (including avoiding wind) may be another important factor.

Fewer women said that they would give birth at home with a trained midwife. All women stated that the TBA came with a cost of about $5.00, and some mentioned that they would have to sell a chicken to pay for this. It appeared that women did not place a high priority on having trained professionals with them during labor and delivery.

Postpartum Seclusion and Check-up

Most women stated in the in-depth interviews and FGDs that they stayed in the home with their newborn for a week up to a month or longer after giving birth. In Ermera mothers stay in the home for one to two months. This practice may well contribute to women's strong desire to birth

at home. Although a few women mentioned that 'sit fire' was practiced or going to be practiced, many mothers said that they do not practice 'sit fire' specifically, although they would stay in the home. A couple of women said they would not practice 'sit fire' because it was already hot in this area and they had a metal roof that would make it hot enough for them and the baby. Other women said that they would stay inside, but their husbands would go to get some medicine for them. One woman stated that she could leave the house earlier if the baby was a girl because fewer people would come to visit.

Because many respondents did not state specifically they would practice "sit fire," the recommendation to avoid 'sit fire' was only given once. On the return interview, the respondent informed the team that although she had not yet given birth she had discussed the agreement with her sister who told her that it was very bad to not 'sit fire' because reducing the distance she sat from the fire or not sitting next to the fire would cause sickness for her and her baby. Therefore she did not have the intention of implementing the new practice despite agreeing to it in the first interview.

Related to the common belief that it is important to keep the baby warm and away from the wind, most women said that the baby needed to be bathed by the grandmother after delivery of the placenta. This practice has the effect of delaying the baby going on the mother's breast. One woman mentioned that the baby could not be washed if it was born at night and that she would need to wait until the morning. Another mentioned that the water had to be warm because the cold water would cause the baby to have a respiratory problem '*masuk angin*' – wind in the body. After the baby is washed, it is coated in oil or powder. Almost all women stated that they would wrap the baby in a sarong and keep them wrapped for at least a week. The interviewer observed that newborns were wrapped really well, often with hats and gloves in addition to the sarong. In all instances the baby's arms were wrapped too, so there was no opportunity for the baby to explore the mother and its environment.

There are a few definite practices or plans for women after delivery. Two women said that they would place hot wet cloth on their abdomen and then bathe.

Some women mentioned an eye washing ceremony where family members would come to the house and wash the baby's eyes. The *fase matan,* or eye washing ceremony, is an integral part of Timorese culture. The ceremony takes place three days to one month after the baby is born. Relatives come to the family's home to congratulate them and visit the mother and the baby. Relatives chew betel nut and have food together. This ceremonial washing is a way for family members to wash the baby's eyes (as babies are born with dirty eyes), bless the baby and ensure good vision. The washing is done with water and coins are rubbed several times over the baby's eyes.

When new mothers leave the house (after one week to two months), most take the baby to a clinic for immunizations. They stated that immunization protects the baby from illness. Only one woman stated that she would not take the baby for immunizations. One woman had never taken any of her six children for vaccinations, but she did recently with her youngest. That child's arm swelled after the injection, so she does not plan on taking her next child for vaccinations.

Most women did not know the weight of their baby when they were born because the birth was at home. Most women compared them with the size of other babies. One woman stated that her babies were all the same size because they came from the same father.

Discussion and Possible Follow-up

Health workers and volunteers should encourage women to go for a postnatal check-up as soon as possible after delivery. Based on mothers' comments, programs might consider efforts to improve the attitudes and interpersonal skills and treatment by nurses and midwives. It seems likely that, if it were available, many mothers would welcome a postpartum check-up at home within the first few days. (The Ministry of Health recommends postpartum visits within seven days and at seven weeks.)

BCC should address the dangers of exposing newborns to excessive smoke. Traditional leaders/ grandmothers could be consulted to learn if there are acceptable alternative ways to keep the mother and newborn warm.

Maternal Diet Postpartum

There are some beliefs associated with postpartum foods and illness or causing illness, although not all women have them. Most diets are reasonably varied but limited to what women have readily available in that season. Corn is readily available in Bobonaro most of the year, but interestingly, some women have a postpartum corn taboo, so they avoid eating their staple diet because they think it "makes breast milk dry up." In contrast, others think corn is essential for breast milk production.

A lot of women associate drinking lots of water with increased breast milk production, in particular drinking hot water. Women also believe that eating well helps with breast milk production. One woman stated that she would normally have three meals a day, but when she has a baby she needs to eat more, so she will have four meals a day. But the same woman said she will not eat salt because "salt affects the baby's umbilical cord stump and causes infection." This view was shared by another mother. Some women avoid many different foods during the first month of the newborn's life, eating only rice porridge with ginger and salt. But after one month, the diet changes to include vegetables and protein-rich foods.

There were examples of well balanced diets; for example a woman in Batugade, with good access to markets, stated that her diet would consist of bread and porridge for breakfast, for lunch rice or corn, meat, sometimes pork, beef, eggs and vegetables, for dinner, rice with vegetables, tapioca leaf and fish or dog. Some of the more common foods eaten are corn, peanuts, mung beans, rice, cassava, pumpkin leaf, vegetables, rice porridge, and ginger.

Two respondents mentioned pumpkin leaf and red beans as food taboos. Fish was a food taboo in Batugade, which is close to the ocean. One woman avoided fish, despite easy access, because her grandmother and mother told her that fish is bad for the baby, because the "baby becomes itchy" and it is bad for the mother because it produces "white blood… like you produce when you are menstruating – but it goes to your brain and causes disease," she said.

Breastfeeding

With one exception, every woman interviewed was breastfeeding or intended to breastfeed, but many of their breastfeeding practices deviate from optimal child feeding.

Immediate Breastfeeding

There is a strong belief that breast milk does not start for one to three days postpartum. There appears to be no understanding that breast milk is stimulated by suckling. Because of these beliefs, pre-lacteal feeds (including formula, depending on access to market and money availability) are given to the newborn and/or the newborn is given to another family member or neighbor to wet nurse. Only one woman interviewed put the baby to the breast immediately.

In Bobonaro wet nursing and pre-lacteal feeding were commonly practiced (by 5 out of 9 mothers and 4 out of 9 mothers respectively). All pregnant women had the intention of wet nursing because of their perception that breast milk does not start straight away. Wet nursing was also mentioned in the FGD as a practice carried out in Fahisoi. Wet nursing is reported to be less common in the east.

One woman said that the breast milk does not start until the ancestors (dead grandparents) are happy with the name for the baby. “If they do not like the name, the breast milk will not come.” So they have to wait and give sugar water and change the name. When the “dead grandparents” are happy with the baby’s name, the breast milk starts. In an FGD, participants also stated that some women do not have enough milk to breastfeed when the baby is born, which can be due to dead grandparents fighting with each other over naming the child. This point has also come out in mother support counseling meetings in Dili and Baucau. It appears there is a perceived association between external temperature and feeding – “a mother should always shower with hot water before breastfeeding if she has been outside of the home.” This is because a ‘bad wind’ could hit the woman’s breast, thus making the baby sick if it feeds from an unwashed breast.

After one hospital birth, the baby was given sugar water. In this case the mother and grandmother were the influencers, but the doctor also supported this action because he said that breast milk does not start straight away and the baby needs to drink. Thereafter, this baby was given formula because the mother did not have breast milk.

A lot of women mentioned that when the baby is born the mother delivers the placenta and then there is a ritualistic washing practice. This practice is normally conducted by the grandmother, and then the baby is coated in oil, powder and dressed and wrapped before the baby is given to the mother. Even then it is not clear whether the baby is given to a neighbor for feeding/or sugar water is given by a family member.

Colostrum

More than half of the women in the in-depth interviews said that despite the delay in giving breast milk they either gave colostrum or had the intention of giving colostrum *(susu kinur).* The other women said they discarded colostrum because it is dirty or bad for the baby. Most

experts believe that even if breastfeeding is delayed the first milk that will be received by the baby will be colostrum (as long as it is not discarded).

Almost all pregnant women had the intention of discarding colostrum. One said that her mother had told her that colostrum could make the baby sick. When asked what sickness it caused, she did not know. She only had plans to give the white breast milk when her baby was born. Seven out of nine women were given the recommendation to encourage them to feed colostrum to the baby immediately after birth. All agreed to try the practice. At the time of the return interviews, four out of the eight women had given birth. One women had said she had given colostrum but not immediately because they had to wait for somebody to come from a long way to cut the umbilical cord. The other three women had given colostrum immediately. They all felt happy that they had done this because they felt that it was good for their baby. Of the remaining women, one had given birth and moved to Indonesia, one had no recollection of the TIPs agreement, and two still had the intention to give colostrum. (Interestingly, most women had not delivered when the team returned for the second interview, despite leaving a good six-week period between the first and second interview. This raised questions as to whether women really have any firm idea of their due dates, which might have implications for antenatal visits and the information that they are receiving at the clinic at antenatal check-ups.)

What was highlighted in the focus group discussions and reinforced in the in-depth interviews was that if women receive information about the importance of giving colostrum, they had either given colostrum or had the intention to try. These women, most of whom live in places with better access to health care services -- Same, Metinaro, Lahane -- said that they had learnt that colostrum is good for their babies because it has lots of vitamins and that it should be given to the babies. For example, in Metinaro and Same, women in FGDs had said that they had begun feeding the baby colostrum within the first hour. The information about good breastfeeding practice is coming from government and NGO health staff in the district.

Most of the negative information about colostrum is handed down from grandmothers and mothers. Many women who gave colostrum this time had not done so with previous children. The information about colostrum knowledge aligns with the information from the FGDs that knowledge is widening that colostrum is good for babies. One man had heard from somebody that colostrum was good for babies, and he told his wife to give it to their baby when it was born. In a Fatulia FGD, women mentioned being confused about the conflicting information from health care workers and their family members. One woman said that she thought maybe they should listen to health care professionals, however, because they were trained.

Exclusive Breastfeeding

As described below, exclusive or at least predominant breastfeeding for about four months is common among the mothers interviewed. The main problem in the first few months was the normal pattern of frequent but very short breastfeeds, which probably meant that babies were not getting the benefits of the more nutritious “hind milk” that comes out after various minutes of suckling. The most common recommendation given in the 0-5 month category was to give at least 10 longer feeds, using both breasts each time, a day (and night). This would require that

mothers increase their awareness of how often they breastfed and for how long on each breast[1]. Sixteen respondents in the 0 – 5 and 6-23 month age group were given this recommendation and all agreed to try the new practice. In the return interview, a lot of women said they had kept records of how long they had breastfed. They made comments like "my baby slept for longer after" or "my baby cries less now and is much happier." They also commented that it was better for them to spend longer breastfeeding because they could put the baby down to rest and continue with their housework.

The second most commonly prescribed recommendation was to avoid feeding the baby other foods or formula during the first six months. Most women who were interviewed had babies of very young ages. Most had introduced prelacteal feeds but were now just breastfeeding. One woman who had commenced formula accepted the TIPs recommendation to stop and was just giving breast milk, and she was happy to give just breast milk because she now knew it was much better for her baby. One woman had commenced bottle feeding but had stopped after receiving the information about bottles being contaminated with bacteria.

Mothers Returning to Work

There was wide variation in when mothers returned to work outside of the home following the birth of a child. The age of the child at the time of returning to work ranged from 2 weeks to 8 months. Factors influencing this included employment demands (selling in the market, or formal employment in one case) and seasonality of crops (i.e. work in the fields was necessary). Most mothers reported leaving the child initially for short periods of time, during which some children didn't receive any food or drink and the mother breastfed immediately upon her return. However, most children received food, water, formula, or breast milk (from a wet nurse) when the child was hungry/thirsty/crying while the mother was away. Some mothers reported waiting until the child was "old enough" to leave the home with her, and then carrying the child to the fields, market, mass, etc. The women who carried their children to the fields usually did so because there was no one else to care for the child in the home, not by preference. "[The baby] goes to the fields with [me], because there are no other people to watch her at home." "[The mother] doesn't like to bring (the baby) to the fields because she wouldn't be able to work if he was there."

Mothers' returning to work is one determinant of the age at which exclusive breastfeeding ends. However, from this consultation it's not clear how important this determinant is compared to others such as mothers' perceptions of insufficient breast milk and that the child is hungry and developmentally ready for more than breast milk.

Breastfeeding during Pregnancy

Most women said that if they became pregnant again then they would stop breastfeeding. They believe that continuing would be bad for the growing child, since at that point the breast milk is for the growing fetus only. One woman stated that she had seen a neighbor continue to breastfeed while she was pregnant, and her child became malnourished and sick.

[1] During the pre-test/field trial activity in Dare women had no awareness of how often they breastfed or for how long. The recommendation to count the number and duration of breastfeeds was not included in the original TIPs menu but was felt necessary based on the pre-test/field trial experience.

Breastfeeding with Complementary Feeding

Mothers of children 6-23 months were asked how important they felt it was to continue breastfeeding once the child had already started eating other foods. Among the 23 women responding to this question, there was unanimous agreement that it was important, to keep the child healthy, prevent sickness, help the child grow well, and make his/her body strong. One respondent said that if she were to stop giving breast milk suddenly, the baby's health would decline. Apart from benefits for the child's health, issues of care and convenience were also cited. Four women mentioned that breastfeeding makes them feel happy and is an important way to love and care for the child. Three women mentioned that the benefit was convenience – "it's easier to give breast milk than having to prepare all the foods the baby would need otherwise." One woman said "I can give the breast very quickly when (my daughter) cries," reflecting both benefits of care and convenience.

Bottle Use

Out of 34 children 0-23 months of age, 12 were currently drinking from a bottle at the time of the first interviews (information about bottle is missing for 2 mothers). Mothers gave formula, water, sugar water, and sweet condensed milk (*susu enak*) in the bottle. They cited convenience (they give it when they leave the child at home with someone else, or to stop the child from crying), and also the desire to give formula "because it helps the baby to grow well." Bottle use was most common in the suco with the greatest trade/markets access. Five out of 7 mothers in Batugade (on the coastal road to Indonesia, with a large market) gave a bottle at the time of the first interviews.

Mothers who did not use the bottle said they could not afford it, they felt they had enough breast milk so it was not necessary, or they had tried and the child didn't like it. A couple of women mentioned that they did not use bottles because they had heard they can make the child sick.

Eleven mothers were asked in TIPs negotiation to stop giving the bottle and use a cup or cup and spoon instead. Eight of these women were successful and planned to continue not giving the bottle. At the second interview they remembered the information that the bottle could harbor bacteria and make the child sick; several mothers said this was new information that they had not heard before. Most felt that it was easy to stop giving the bottle, because it is easier to clean a glass than a bottle. Some of the children liked drinking from the glass, which also made it easy for the mothers to make the change. One mother found it difficult because her child was already used to the bottle, "but (I) kept giving him the cup every day, and now he's used to drinking from it." One mother said she felt using the bottle or the cup was about the same, because "with the bottle it takes more time to clean, but with the cup it takes more time to give. But since I know now that it's better for him, then I have to try to do it anyway."

Two mothers were not successful in switching to the cup from the bottle. One said she had tried, but she was afraid that her son would spill the water. She felt the bottle was better because he could drink from it by himself, but with a glass she had to watch him and help him. It should be noted that this mother also suffers a mental condition ("*sakit jiwah*" in Bahasa Indonesia, apparently a bi-polar disorder). Her behavior alternated from "lazy" (her mother-in-law's words) to "wandering the streets" (her own words). She had never breastfed her 7-month old child (not old enough to manage a cup by himself), and she is pregnant again. Another mother was not

successful with this recommendation for reasons that are not clear. Another woman was given the recommendation and agreed to try, but the notes from the second interview were lost so it's unknown if she was successful or not.

In summary, most mothers who give the bottle are not aware of the dangers, but once they understand the risk of bacteria and sickness, they are willing to switch and prefer to use a cup or cup with spoon because they find it easier to clean (even if not easier to give), and they don't want the child to get sick from the bottle.

Discussion and Possible Follow-up

Breastfeeding practices are far from optimal, but most mothers seem amenable to improvement. The main poor practices of public health impact include: rare immediate initiation, insufficient long feeds, premature supplementation at about four months, bottle use, feeding prelacteals, and sudden cessation due to pregnancy. BCC should focus on the meaning and importance of exclusive breastfeeding; on the benefits of longer feeds for both baby and mother; on bad consequences of formula and bottles. Health professionals should promote (to mothers and grandmothers) immediate nursing/feeding colostrum (before the delivery of the placenta and the first bath). Community promoters/groups could promote exclusive breastfeeding and help treat or refer breastfeeding problems. Community promoters need training to identify breastfeeding problems and to know when to refer the mother to clinic – like mother support groups. Public health advocates could lobby for legislation to protect breastfeeding related to implementation of the International Code and maternity leave. Programs should encourage mothers' willingness and ability to follow the recommendation to switch from bottle to cup and spoon.

Complementary Feeding Practices

Early Supplementary Food

Most women interviewed stated that they start giving other foods at about four months, or sometimes earlier. One woman, with a two-week-old baby, had already commenced giving formula from a bottle, and another had started giving water. One woman had introduced SUN packet foods when the baby was four months old, because she only produced milk from one breast so she felt her milk was not enough. When she had started back to work in the field, she would leave the baby for a while with her mother who would give sugar water. Still, most had the intention of just giving breast milk until about four months. Many women who had received health information from CARE had the intention of starting other foods when the baby was 6 months. One woman said that she had heard from health workers that foods can be given to babies at four months.

Introduction of Complementary Foods

Mothers of children 0-23 months were asked at what age the child began (or would begin for younger infants) eating complementary foods in addition to breast milk or formula. (The responses to this question didn't capture the age of introduction of other liquids like formula or water.) Of 34 responses, the earliest age to start giving foods was 2 months (1 mother) and the latest was 7 months (1 mother). Most mothers (12) reported 4 months or 6 months (11 mothers) as the age they had started, or would start, giving complementary foods. This is not a surprising pattern of response since past international and Indonesian recommendations were to introduce other foods at 4-6 months. One mother also stated that she had "read on the formula box that it is okay to give food to babies at four months," and another mother had advice from her parents and

grandparents that at 5 months "the baby will need other food more than breast milk to become strong and have a good heart." One respondent said that she had learned from CARE that "giving food to a baby before 6 months could hurt their stomach."

Three mothers of young infants (0-5 months of age) said in the first interview that they planned to start giving food at 4 months. After counseling from TAIS staff, all three mothers agreed to try to give breast milk only and wait until 6 months to give complementary foods. One mother of a three-month old already planned to introduce foods at 6 months, and she discussed this advice with her neighbors, who were also mothers of young infants. "[The neighbors] said that they have to give food before 6 months because the baby is hungry, breast milk isn't enough. So (I) told them… that the baby's stomach was small and you shouldn't give food or water until 6 months because it will make the child sick and get thin, and the baby won't be able to return to a healthy weight. [I] also gave the example of our other neighbor who started giving foods before 6 months, and that child lost weight and wasn't able to gain weight quickly. It was the effect of giving food too early." The respondent said that her neighbors had agreed to try to wait until 6 months to give food to their babies. It should be noted that this was a successful example of peer to peer education.

The first food is normally rice porridge, to a lesser extent porridge with corn, or in some cases commercial porridge ('SUN' red-rice flavor). The latter is only used by those with access and money, but nutritionally it is a more complete food than plain rice or corn porridge ('SUN' contains soya flour protein and is fortified with some vitamins and minerals). Eight respondents reported giving 'SUN' porridge as the child's first food (6 of the 8 live in Ai-Assa *suco*), and two to three months later they introduced homemade rice porridge. Based on this pattern, it seems that these mothers find 'SUN' to be an appropriate food for infants, but eventually introduce rice porridge (mixed with other family foods) as a transition to family foods. The reasons why these women prefer introducing commercial 'SUN' as the first food over homemade rice porridge were not explored.

In summary, early (before 6 months) introduction of complementary food is common in the study area. The main reason for this seems to be the perception that the child is hungry for more than just breast milk. Counseling mothers that the stomach of the child is not ready for food until 6 months may be effective, but it also may not concur with mothers' perceptions of the child's development (readiness to eat).

In TIPs it was recommended to five mothers of children 0-5 months, who were already supplementing, to eliminate or reduce the supplementary food or drink they were giving to their children. Since one was the mother of twins, the TIP applied to six infants. The recommendation was successful for 3 of the 6 infants, generally the younger children (3 months of age or less). The success of this recommendation depended primarily on the reaction of the child: if the child didn't protest, then the new practice was successful, but if the child protested, it was not. Mothers did not cite protecting the child's health as a motivation to stop what they were already doing. "[The one twin] is not very easy to feed formula, so it was easy to stop, but with [the other twin], he likes formula. [The mother] really doesn't feel that she has enough breast milk for two babies." "[The baby] is crying less now than she was before. When she drank water, she would cry a lot." "Although I'm breastfeeding, the baby still cries, but after getting porridge he's calm

and can play by himself. He's already used to getting the porridge." "Even though I'm breastfeeding 8-10 times during the day, [the baby] still cries, so I don't want to stop giving him the 'SUN' (porridge)." The two infants who were already receiving porridge were four months old at the time of the interview.

Food Variety

The variety of food given to young children in Bobonaro district is remarkably low, resulting in very low protein and micronutrient intakes. The district is not markedly different from other areas of Timor-Leste in this regard. Homemade rice porridge is the predominant complementary food, usually prepared plain, with salt, onion, or sometimes 'Masako' (chicken bullion powder with MSG). Almost all mothers interviewed showed a general awareness that adding vegetables or eggs to porridge is good for the child and said that they do it sometimes, but the 24-hour dietary recalls showed that in the day prior to the first interviews, almost all children ate plain rice porridge.

Fifteen mothers received the recommendation to "give a variety of soft nutritious foods," although almost all 27 mothers of children 6-23 months of age would have been eligible to receive this recommendation based on the first interview's 24-hour dietary recalls. Only two of the 15 mothers said that the advice to add vegetables or eggs to the porridge was new information and that they had never heard about preparing porridge like this before.

Of the 15 mothers asked to try this practice, 10 tried it, 7 were successful, 5 were not (because they didn't try or tried once and didn't like it); and for 3 mothers the result was unclear or not credible (because of inconsistency in the mothers' responses). 'Success' for this practice was based on the mothers' reported behavior and also evidence from the 24-hour recall that the child was consuming more nutritious foods at the second interview than at the first.

Seven mothers who tried this recommendation felt that their child liked to eat more when they added other foods (like vegetables or eggs) to the porridge. "[His] reaction has been good. He likes to eat more now and when one plate is finished, he will ask for another one." "[She]'s eating more now. Before, she ate three big spoons of food and now she's eating six." "If I give this kind of food, he'll want to eat more and he'll be full, and he'll be able to play without crying. His body will be healthy and he'll grow well."

Another benefit reported by mothers who tried the recommendation was that they felt it would make the child grow strong and healthy. A few mothers were so motivated by the desire to do the best thing for their child that they didn't mind the extra effort. "Normally if I want to get some foods that aren't available in my area, I go to the market. And even though that takes some extra effort, I'll try to do it because of my son… the important thing is (his) health." A few mothers also felt motivated by the belief that giving nutritious foods would make their child become smart and have a better future. One mother said "I want to give the best I can to my children because I am alone, and I want them to have the best future." "I'm happy if my child will be smart in the future, because we are a poor family. If they don't become smart, then they will have to work in the fields like their parents."

Dark green leafy vegetables (DGLVs) were the most common vegetable available to add to the porridge, especially pumpkin leaves, mustard greens, moringa, and kangkung. Egg was also an acceptable food to add to the porridge, as was chicken broth and meat and beef, although meats aren't regularly affordable to most families. One mother felt that her six-month-old child was still too small to eat vegetables. "Once (the baby) gets bigger, then I'll start to mix the food with vegetables, but for now I only mix in egg, because (the baby) is still small."

The women who did not try the new practice or who tried at least once during the trial period but didn't continue, cited money and convenience as the major barriers to adding nutritious foods to the child's diet. "Aduh, I don't have time to cook those things. It's faster to cook plain porridge, so I don't have to be busy getting vegetables from the garden or from the market." "… it's hard to get vegetables, you have to go to the market, because the pumpkin leaves in our garden are already dried up. I only want to cook plain porridge because it's easier… there is no money to buy vegetables, and I think it's more practical to just give rice." "No, I don't have any fears about giving him vegetables. I did that with my older children, but now I just don't have time to go to the garden."

Some women who were successful with the practice, and also those who had tried it but didn't continue, mentioned their concern about the ongoing availability and affordability of vegetables. "For now I don't have any problem getting the foods. The part I don't like is wondering how I'll continue doing this once the plants in the garden die. Will I have to go to the market? It's far from my home and it will take up money." "To have some eggs and vegetables is sometimes really difficult because I don't have money… if there are vegetables, then I'll mix them, but if there aren't vegetables, then I won't." "It's a little difficult because I have to buy the vegetables from the market … and I'm worried that I won't have enough money in the future to buy what he wants to eat. I want to keep doing it but we don't have enough money…."

An incident with a team member may shed some light on beliefs and practices related to adding vegetables to plain foods such as rice and porridge. A team member became ill during the field work when a chronic stomach condition flared up. Instead of eating the usual meals of rice with vegetables and fish or chicken, he asked the cook to prepare porridge for him. The supervisor suggested that he add some vegetables to his porridge, but the interviewer felt that the addition of vegetables would be too harsh on his stomach. Although he was sick at the time, this incident may reflect a broader perception that plain porridge is easier on the stomach and that adding things to it may make the porridge too 'harsh' and irritate the stomach.

Another area that needs to be explored further is the feasibility of adding other nutrient-rich foods such as oil and nuts. The interviewers often suggested adding vegetables and/or egg, but oil was less commonly tried. It's not clear if this is because the interviewers recommended it less, or the mothers were less likely to have oil.

Quantity of Food Given

Twenty-four-hour dietary recalls were used to estimate the volume of food given to children and then repeated during the final interview to gauge change related to the new practice(s). The TIPs recommendations in the first interview were based on the number of spoons of soft food that was given to the child in the previous 24 hours. Twenty-four-hour dietary recall information was

collected for all children 6-23 months of age, and also for children 0-5 months if they had already started eating foods.

A one-page guide was created to assist interviewers in counseling mothers on age-appropriate recommendations for child feeding. The guide included the recommended number and duration of breastfeeds per day, the recommended number of meals and snacks per day, and the recommended volume (spoonfuls) of food per meal. The guide also mentioned the importance of adding nutritious foods such as vegetables, egg, oil, nuts, or meat to the child's diet.

Five mothers of children 6-23 months of age were asked if they would be willing to try to give their child a larger quantity of food. Four mothers tried to do the practice at least once, and three liked doing it enough that they planned to continue.

The mothers who tried to give a larger quantity of food said that it wasn't difficult to do as long as the child was interested to eat. One mother said, "If the baby likes to eat, then I'm hard-working/diligent (*rajin*, in Bahasa Indonesia) about cooking for her." "It's not difficult to do because she wants to eat."

Closely related to this "quantity" TIP was the "quality" TIP to mix nutritious foods with the child's porridge. As discussed above, a consistent result of the "quality" TIP was that the children liked to eat more food. Mothers were pleased with their child's increased appetite as they felt it would help the child to grow.

One mother tried to feed more but reported feeling sad and frustrated because her child simply didn't want to eat more even though she tried a number of ways to get him to eat. Another mother did not try to feed more than one rice spoon and felt strongly that the child would not be able to finish a larger amount of food. "Even if I forced it, he would throw it up again. More than one rice spoon is for a baby of two years or more."

While increasing quality and/or quantity of nutritious food is not easy for all mothers, a number of interesting benefits emerged from TIPs that can be used in BCC. Mothers in the trials reported that:

- Children like to eat more when the porridge is flavored with something other than just rice (vegetable, noodle, egg, etc.).
- Mixing porridge with vegetables makes children healthy and their bodies grow well.
- Children who like to eat are full and can play without crying.
- They feel responsibility to prepare the best possible food for her child, even if it takes extra work (to be a good mother).
- The child will grow up to be a "smart person," who has a good future, and the mother will feel proud.

24-hour Dietary Recalls

To help mothers estimate the volume of food that their child had consumed in the previous 24 hours, three sizes of common spoons in Timor were selected: a rice spoon (for serving rice or porridge), a table spoon (for eating food and soup), and a tea spoon (for mixing coffee/tea or

feeding babies). Each interview team was given a set of the three spoons and a small plastic cup from the market that could hold approximately 250ml liquid. Interviewers were trained to ask about everything the child had eaten from "this time yesterday until now," but mothers often found it difficult to remember what the child was doing at the same time of day yesterday. The interviewers found it easier to ask mothers to recall all the food the child consumed from the first food eaten the previous day, until (but not including) the first food eaten on the day of the interview. Interviewers showed mothers the three spoons (and the cup, for liquids) and asked them to estimate how many spoonfuls of which size of spoon the child consumed for each food mentioned. For biscuits, interviewers recorded the type (brand) and number consumed, and then volume conversions were estimated. For other solid foods (processed foods or fruits), interviewers recorded how many pieces the child consumed, and then they estimated volume conversions. The estimated equivalent volumes were expressed in terms of the three reference spoons (Table 3 and Figure 1).

Table 3. Conversions of Various Food Items to Spoonful Equivalents

Food Item	Spoonful Equivalent
1 bun	1 rice spoon
1 bun (inside only, without crust)	½ rice spoon
1 banana fried w/ batter	1 rice spoon
1 banana	4 TBS
1 Krispy cracker	½ TBS
1 Bis-kuat (Dannon)	1 TBS
1 Tiara chocolate cookie	1 TBS
1 Roma biscuit (large)	1 TBS
1 orange slice	1 TSP
1 donut	½ rice spoon
1 "Butter Coconut" biscuit	1 TBS
1 Roma biscuit (small, like a Maria biscuit)	1 TSP
1 packet instant noodles	3 rice spoons
1 egg	1 rice spoon

Figure 1. Three commonly sized spoons in Timor -- rice (serving) spoon, tablespoon, and teaspoon -- were used to estimate volume of food consumed by children

The estimated volumes of the spoons were 45ml (rice spoon), 10ml (table spoon), and 5ml (tea spoon). Estimation was made by measuring the milliliter volume of porridge from each spoon in a calibrated container.

Based on these estimates, Table 4 shows the average (mean) volume of food that was consumed by children by age categories at the first and second interviews, and the change in the average (mean) volume between the first and second interviews. Overall, children's non-breast-milk volume intakes increased quite significantly in the 12-23-month age group over the trial period, but stayed virtually the same among younger children.

Table 4. Volume (ml) of Children's Daily Food Intake, by age category

Age of children	**Average (mean) intake, 1st interview (ml)**	**Average (mean) intake, 2nd interview (ml)**	**Change in average (mean) intake (ml, rounded)**
6-8 months (n=9)	153 ml	156 ml	3 ml
9-11 months (n=9)	246 ml	247 ml	0 ml
12-23 months (n=5)*	304 ml	430 ml	127 ml

*Four respondents in the 12-23 month old category were not included in this analysis due to missing or invalid data at the first or second interview.

However, these volumes are still well below the amount of food recommended by the MOH Timor-Leste for young child feeding[2] (Table 5), based on small spoon and cup measurements (one cup is about 200-250ml).

[2] Ministry of Health, Timor Leste, "The way to feed babies and young children so they grow and develop well and stay healthy," Revised 070324_4th draft.

Table 5. IYCF Feeding Recommendations, MOH Timor Leste

Age of child	Amount per meal	Frequency	Daily recommended intake
6 months	6-9 small spoonfuls per meal	2 meals/day plus frequent breastfeeding	12-18 small spoonfuls per day (approx 120-180 ml)
7-8 months	2/3 cup per meal	3 meals/day plus frequent breastfeeding	2 cups per day (400-500 ml)
9-11 months	¾ to 1 cup per meal	3 meals/day plus 1 snack/ day plus breastfeeding	2 ¼ to 3 cups per day plus 1 snack (approx 500-800 ml)
12-23 months	Full cup or more per meal	3 meals/day plus 2 snacks/ day plus breastfeeding	3 or more cups per day plus 2 snacks (approx 650-900 ml)

The CC found that almost all women 'measure' the amount of food their child is eating in rice spoons, as this is what they normally use to serve the porridge from the pan to the child's bowl.

Discussion and Possible Follow-up

Programs should consider giving age-appropriate recommendations for meal volume based on the number of rice spoons to feed (perhaps instead of, or alongside mentioning the number of cups). Although women most likely understand 'cup', their actual practice in serving food is by the number of rice spoons. So, behavior change is likely to be more successful if messages are given in terms of the women's actual, current practices.

It should also be emphasized that the food should be thick enough to pile up in the spoon. The volume of 1 rice spoon of thin porridge is significantly less than the volume of 1 rice spoon of thick porridge, as the latter (in addition to being more calorie dense) will naturally heap in the spoon. Photos and illustrations in IEC materials, and demonstrations where possible, are important.

Using the estimated volume of daily food intake (Table 4), daily kcal intakes were also estimated based on the following: (1) the kcal of cooked hulled rice is 93kcal/100g[3], and (2) the energy density of thin porridge is approximately one-half the energy density of cooked rice[4]. The energy density of thin porridge in Timor was therefore estimated to be about 47kcal/100g (47kcal/100ml). Table 6 shows the estimated daily kcal intakes at first and second interviews, compared to the recommended intakes for breastfed children in these age groups[5].

[3] NutriSurvey (2005). Copyright Dr. Jurgen Erhardt, University of Indonesia, SEAMEO-TROPMED. (www.nutrisurvey.de). Nutrient content of foods derived from German Bundeslebensmittelschlüssel (BLS) food database, updated 1999 (version BLS II.3), food.

[4] Based on a web-based review of available literature on the topic of energy density of complementary foods, one-half appears to be a reasonable assumption.

[5] WHO/UNICEF, 1998. Complementary Feeding of Young Children in Developing Countries: A review of current scientific knowledge. Geneva: World Health Organization, WHO/NUT/98.1, 1998.

Table 6. Daily Caloric Intakes from Food, as estimated by the average (mean) volume of intake reported in 24-hour recalls, compared to recommended kcal intakes from food (for breastfed children)

Age category	Estimated kcal at first interview	Estimated kcal At second interview	Recommended kcal/day
6-8 months	72 kcal	73 kcal	200 kcal
9-11 months	116 kcal	116 kcal	300 kcal
12-23 months	143 kcal	202 kcal	550 kcal

The intakes are most likely underestimates, since the ml to kcal conversion was based only on the kcal content of thin rice porridge. In reality, the children also eat a small amount of other foods (especially in the second interviews), such as biscuits, fried bananas and breads, noodles, and eggs, which have a higher caloric density. The specific caloric densities of each food were not taken into account in these estimations. It is also possible that mothers forgot to mention all foods that the child ate. However, it is clear that the majority of food eaten by Timorese children is thin rice porridge. The high rates of underweight and stunting in Timor clearly indicate chronic energy (kcal) deficiency, and low intakes are further compromised by intestinal parasites, diarrhea, and other infections.

It should also be noted that the observed increase in quantity of food consumed by the child (comparing 1st interview intakes and 2nd interview intakes) seemed to be more a result of the recommendation to give nutritious foods than of the advice to increase the quantity of food given. Several mothers' responses to the 'quality' TIP was that they felt their child liked to eat more when the porridge was mixed with other things, and so they felt motivated to prepare and feed more. In contrast, mothers' response to the 'quantity' TIP -- the recommendation to feed more food -- was less enthusiastic. They didn't want to force the child to eat, or they felt that preparing extra food would be a waste since they child probably wouldn't eat it.

Most mothers already had knowledge of mixing porridge with DGLVs or eggs at the first interview, but they were not practicing this. The 'tipping point' for mothers' willingness to act on the information about nutritious foods seemed to be the home visit and personalized counseling from a respected 'health worker' (in this case, the TAIS interview team).

Discussion and Possible Follow-up

Increasing caloric density of foods by adding nutritious food and decreasing water should be a priority focus for programs hoping to improve infant and young child feeding. The focus in messages should be on improving quality more than on increasing quantity. Based on the CC TIPs experience, it appears possible that counseling mothers can be effective in increasing the quality and amount of food that children eat, especially among children older than one year.

Snacks

Nine mothers of 6-23 month old children were asked to try to give snacks to their child every day. Seven tried, and the same seven had given a snack to their child on the day prior to the second interview (based on the 24-hour recall). Biscuits and bananas were the most popular and readily available snacks. Other snacks that mothers tried included pumpkin, fried bread (*dosi*), ripe papaya, and orange. For younger infants (6-8 months), some mothers tried mixing the

biscuits with water, or scraping the banana with a spoon, to soften them before feeding the child. One mother mentioned that giving snacks was not a typical practice in her community, so "we have to get used to giving snacks." Another mother was surprised by how much her 8-month-old daughter liked to eat ripe pumpkin. "She likes the pumpkin. I didn't know that ripe pumpkin was good for people, I only knew to give it to the pigs in the past." The same mother said about giving snacks, "It's better to buy fruits and biscuits instead of formula, because formula is expensive."

Benefits reported from giving snacks included helping the child to feel full and satisfied, preventing sickness, helping the child to grow/gain weight, and providing vitamins (from fruits).

Two mothers reported that when they started giving snacks to the one child, then they also had to give to the other older children. But one mother said she didn't think snacks were as important for the older children, because they were already big, and it was the little children that needed snacks the most.

The one mother who talked about not trying this recommendation said, "…in our garden there are no bananas, sweet potato, or cassava. Other snacks that can be bought – I can't give them every day because there is no money. If I happen to have the money then I can buy them, just not every day."

Feeding Style

All of the mothers who participated in the consultation were the primary person to feed the children. Secondary caregivers (who feed the children when the mother is away) included fathers, grandmothers, aunts (sisters of the mother) and, to a lesser extent, older siblings of the child.

The majority of children 6-23 months of age eat from their own plate/bowl and spoon at mealtime (even if these are not specified as the child's own, they are not shared with anyone else at mealtime). Three mothers reported that their children shared plates at mealtime, but only one mother was asked to try giving her children their own plate and spoon at mealtime, which she was easily and gladly able to do. Prior to the first interview, she would sometimes let the children eat together "because it was easy, and the children like to play together." But after the TIPs consultation she started giving each child their own plate, and said "No, I don't mind [the extra attention required]; I'm happy with the information you gave. If she has her own plate, she can eat more and doesn't have to compete for food, and her body can grow well."

Favorite foods included banana, porridge, instant noodles, biscuits, and papaya. One mother said her child didn't like papaya flower and leaves because they are bitter. Some women had difficulty stating what the child's favorite food was, perhaps due to the child's young age and/or the limited availability and variety of food the child had tried up to that point. "He doesn't have favorite foods, because whatever he eats, he has to eat it."

Feeding a Child Who is Sick or Has a Poor Appetite

Normally mothers feed their children in their lap. When the child is sick or doesn't want to eat, they will put the child in the baby sling (a sarong tied around the mother's shoulder and crossing

her body, forming a seat for the baby while she holds him/her (called *gendong* in Bahasa Indonesia) and walk around, rock the baby, and play games or try to distract the child to get him/her to eat. Two mothers mentioned that they would lay the child down on the bed to feed him/her.

All mothers reported that their children have less appetite when they are sick and therefore normally eat less (smaller amounts and less frequently). Mothers said that they normally change the *kind* of food that they offer the child (to stimulate his/her appetite), but most will not force the child to eat the same or a larger quantity of food than he/she normally eats. Examples of changing the kind of food included switching from rice porridge to corn porridge and adding chicken, chicken broth, egg, or vegetables to the porridge, so that the child would be more likely to eat it. But with regard to quantity, one mother summarized the general attitude towards feeding during sickness: "If he wants to eat, then I give him food. If he doesn't want to eat, then I stop feeding him." Only three women said that they would try to give the child more food or "force" the child to eat. However, most mothers mentioned that they would breastfeed more during sickness, when the child was eating less food.

The advice to "give more food when the child is sick" was given to two mothers. One could not be fully evaluated because the mother refused to talk, but she did say the child had been sick and not eaten, and she gave only breast milk instead of food for two days. The second mother had not increased the amount of food given to her sick child, but she had maintained giving the same amount, which was considered a success, given that she normally decreased the amount of food. The other idea that this mother tried was to "give a variety of nutritious food," and she felt that the child was already eating more food (in general) throughout the entire trial period.

Food Taboos for Children

Very few mothers reported food taboos for children. For example, contrary to other research from Timor-Leste, women did not report any taboos against feeding children eggs. In fact several mothers reported giving children eggs to get them to eat more (when they are sick, for example). The taboos for children that were mentioned included corn (3 mothers), cassava (2 mothers), forest beans (1 mother), sweet potato (1 mother), and tapioca (1 mother). One mother also said that her doctor had told her not to give instant noodles since it could give the child allergies. Corn was described as a "hard" food and cassava was described as a "bitter" food. Most women said that no foods were prohibited in their home and that the child could eat anything.

One of the interviewers on the TAIS team raised a concern that the women did not understand this question correctly, because according to her there are several taboo foods in Timor such as some kinds of beans, fish, and eggs. The findings described above may therefore be specific to Bobonaro, or may reflect a misunderstanding in the way the question was asked.

Seasonality of Foods

Mothers were asked if there were any foods that were available now that would not be available in 3-6 months time, or if there were any foods that were not available now that would be available in 3-6 months time. The responses to this question were not consistent enough to be generalized because (1) there was wide variety in what was planted in the gardens of different

families, partly due to highland/lowland climatic differences, and (2) the consultation was conducted between seasons (end of rainy season, beginning of dry/hot season).

However, three mothers' comments gave interesting insight. They said there are different foods with every season, but those seasonal foods are for adults (i.e. mangos and oranges), and foods for children are available throughout the year, such as porridge (rice), papaya, banana, and leaves like morning glory or cassava.

Concepts of Growth

Most women (of children 0-23 months of age) were interested in their child's growth and thought it was important to monitor it. Most women associated breastfeeding, feeding other food, and absence of sickness with growth. "I know that my child is growing well because I have lots of breast milk and he feeds a lot." "…my baby has not been sick." "When he is ill his body weight is down, but when he is healthy his body weight increases." One woman described watching her child grow as "like watching a pumpkin grow." Women could tell that a child was growing well because they looked at the size of their baby, or at the baby's arms and legs, when they washed their baby, or when they lifted them, they could tell if they were getting bigger. Most women had not known the weight of their child at birth because they had birthed at home, so they only found out the weight after about one month when they took the baby to the clinic for immunization. Women who took their child to the clinic had weight recordings in the LISIO. Fewer women described motor development milestones, such as crawling, as indicators of growth. One woman said they (the family) watched their child laughing and responding to them when they talked to her. Another mother (of an older child, 23 months old) said she knew he was growing well "because he is always running and playing with other friends."

Most mothers felt that their child was growing well, but four mothers (out of 36) perceived that their child was not growing well. These four mothers said they could see their child was small compared to other children of the same age or their child was often sick. These were all mothers of the older children (9-23 months).

Discussion and Possible Follow-up

Although young child feeding practices are far from optimal, most families do appear to have access to some healthy foods (independent of seasonality) that they could feed to young children and to be encouraged to use these foods on a daily basis. The fact that almost all mothers knew about adding nutritious foods to porridge, but had fed only plain rice porridge the day prior to the first interview, indicate that knowledge about nutritious foods is often not put into practice. Aspects of child feeding practices that require critical attention are quantity (portion size) and quality (kcal and micronutrient content) of food. Other aspects such as snacks, and feeding during illness and recuperation, should also be addressed. Possible avenues to pursue include:

►Focus on adding oil and available healthy foods to thin gruels (with the motivation that the child will like it more and grow better); feeding larger quantities each time; using free or cheap healthy foods; the dangers of using formula and bottle-feeding (and benefits of cup and spoon instead).

►Community volunteers/mother support groups could expand BCC on child feeding, do food demonstrations, recipe contests, etc. However, individual counseling from health professionals appears motivate mothers more than group counseling from peers (see the 'Advising Others' section of this report), and so credibility/authority of volunteers/support groups will enhance their effectiveness.

►Health professionals could counsel on breastfeeding all children until they are two years old, even if the mother becomes pregnant. Reversing this strong traditional belief will take time.

►Legislation to enforce the International Code on Marketing of Breast Milk substitutes needs to be passed AND enforced. This is urgent before illegal marketing grows and becomes more difficult to control.

Child Health

Immunization

The majority of mothers share the belief that immunization protects their children from serious illness. Three out of 12 mothers did not know what immunization was, although two of those women were in the most remote community where interviews and TIPs were conducted[6]. All of the mothers (who were aware of immunization) said that their husbands and mothers in-law were supportive and encouraged them to take their children to get immunized. All mothers also stated that they knew that sometimes there were negative side effects after immunization, which was normal. Aside from the three out of 12 mothers who were not aware of immunizations, all 27 respondents stated that they were not afraid to take their children to get immunized and did not mention any concerns involving immunization.

There were consistent responses amongst mothers that the person they always consulted with and asked for advice on immunization (or when their child was sick) is their husband. The general health of the child is the parents' responsibility. In the FGDs participants also stated that all child rearing is the mother's responsibility, including care of the sick child. Grandmothers and other family members may encourage a mother to take the child to the clinic when sick or to get immunized, but it is the responsibility of the parents to make the decisions, and it is ultimately the mother's responsibility to take the child to the clinic. Some respondents in FDGs stated that mothers should ask their husband's permission before taking a child for immunization, even though the answer is always yes.

In terms of learning about what each immunization protects against, most respondents stated that this was done at the health facility in a group setting before consultations started. Many respondents stated that they arrived at the clinic after the explanation and therefore did not hear what each immunization protects against. Only three out of 12 respondents had the child's LISIO, but the majority of the other mothers said they received them from health facilities. Reasons for not having their LISIO included storing it their house in the fields for safe keeping and their younger children tore it up. All mothers who could not locate their LISIO during the interview remembered the number of immunizations that their child had received by describing the places on the body.

There was not a single respondent who took their child to the clinic due to information received about immunization campaigns. All respondents said that they had never heard of an immunization campaign[7].

[6] This was in *suco* Ducurai, which was the only community where all mothers that were interviewed about immunization had no knowledge of immunization.

[7] This includes *suco* Hatolia which has community health volunteers. The health volunteer was trained by Caritas and is responsible for going from house to house to assist the clinic in giving information about immunization, de-worming and vitamin schedules. In Hatolia the CC team was accompanied by a nurse from the Hatolia CHC along with the *xefi* juventude who is also the health volunteer there.

Discussion and Possible Follow-up

BCC could focus on protecting children closer to the ideal schedule. Possible additional actions include:

- Organizing community tracking systems to remind and motivate families when a vaccination is due
- Training health staff to improve their counseling on immunization
- Increasing the amount and reliability of outreach sessions
- Suggesting that families pin the LISIO's high on the wall; and/or provide a reminder material that includes a pouch to keep the LISIO and other important documents.

Danger Signs and Home Treatments

Mothers, fathers, and grandmothers were asked the same questions about danger signs for young children. There were no consistent responses amongst or within the groups about danger signs for young children or for infants. Six respondents, however, did state that simultaneous vomiting and diarrhea was one of the most dangerous signs for a young child. Responses ranged from fever and runny nose to measles and malaria. There was no differentiation between danger signs and the actual sicknesses. When asked about whether they worried about a specific list of symptoms, there were similar answers amongst mothers, fathers and grandmothers. Each symptom was worrisome because of the young age of the child, the possibility of medicine not being effective and child death. All respondents[8] took some sort of action in response to these symptoms rather than perceiving child sickness as something out of their control. The action plan consisted of either taking the child to a health facility or looking for a home remedy.

Table 6 summarizes mothers, fathers and grandmothers responses and course of action to certain sicknesses or danger signs.

Table 6. Danger Signs and Treatments

Sickness	Com-press	Traditional medicine	Use leftover medicine	Take child to clinic	ORS	Breast-feed	For-mula	Fruit	Other foods	Don't know	Total
Fever	10	17	3	6	0	0	0	0	0	3	39
Difficult Breathing	0	17	1	10	0	0	0	0	0	11	39
Cough	0	22	2	9	0	0	0	0	0	6	39
Diarrhea	3	19	1	8	0	0	0	0	0	8	39
No appetite	0	4	0	9	0	2	1	8	9	6	39

[8] This is with the exception of several respondents in Ducurai, who stated that they would take no action and just wait for the child to get better because the health facility is so far away. Another respondent in Ducurai stated that if a child has certain danger signs, it is best to just wait for death (*hein mate).* This non-action, defeatist attitude was only encountered in Ducurai.

The most common treatment for the various sicknesses is traditional treatments (see Annex 6 for further detail on types of traditional treatments). There was some secrecy surrounding traditional home treatments because, according to traditional beliefs, telling others about home treatments will reduce their effectiveness. Due to this belief, certain respondents answered in very general terms by saying that they used Timorese medicine or tree leaves and bark but refused to elaborate further. When probed further, several respondents said they used 'our medicine' (*ita nia aimoruk Timor*), assuming that all Timorese would know exactly what that signified. There were consistent responses for home treatments in the areas of fever and cough.

Mothers were very receptive to trying the recommended behavior using a compress to relieve a mild fever, as this was already practiced amongst several respondents. After trying this behavior, all mothers discussed only benefits of this practice. There were no mentioned barriers to this practice. Overall, there was great interest in treating common illnesses in the home.

Respondents overwhelmingly stated that they would rather seek care from the health facility than from a traditional healer (*dukun*). The main reasons for this were that traditional healers always ask for payment and may lie about sicknesses to increase their payment. Other reasons for choosing health facilities included not being able to receive modern medicine and doubt about the effectiveness of a traditional healer's ability to diagnose sickness and give effective treatment.

Mothers were interested in trying the recommended behaviors of a compress to treat fever and homemade oral rehydration salts (ORS) to treat diarrhea. Two out of 9 mothers tried making and giving ORS at home to treat diarrhea and stated that they would continue this practice in the future[9]. Mothers stated that this practice was effective at stopping diarrhea (despite the interview's explanation that ORS replaces lost fluids) and was easy to make at home. Two out of 5 mothers (who had not tried this practice before) tried using a compress to treat fever and stated they would continue this practice in the future. Although the majority of mothers did not have children that were ill at the time of the interview, there was definite interest in these practices, and many mothers asked for more ideas to treat child sickness at home.

In terms of prevention, FGD participants said boiling drinking water and sleeping under a mosquito net were the most important actions that parents could take to prevent young child sickness. Very few FGD participants mentioned hand washing as a preventive behavior.

Discussion and Possible Follow-up

BCC could focus on specific danger signs and on the importance of acting immediately, with a focus on gravity, i.e. when does fast breathing, diarrhea, etc. reach the point at which they should immediately seek care. Illustrated home-based reminder materials could be designed and distributed. BCC could encourage traditional treatments that are helpful while reminding families of the need for immediate care-seeking when a danger sign appears. Other helpful actions might include improving/expanding outreach to remote, populated areas; clarifying and disseminating rules regarding which facilities people can use; and encouraging community leaders and groups to prepare emergency medical transportation plans.

[9] The low numbers are due to the field team encountering mainly mothers with healthy children. Therefore, these mothers did not have the opportunity to trial the recommended practices. These behaviors were given to mothers as according to the guides did not have any other behaviors to recommend.

Disposal of Feces

Twenty-three out of 27 respondents stated that they had a designated place for defecation -- a latrine or hole in the ground, which is referred to as a traditional toilet by Timorese[10]. The majority of families that have toilets use them during the day and during the night regardless of their distance from the house. This refers only to adults, as the majority of respondents stated that young children did not use the toilet.

During the day young children defecate next to the home, and the fecal matter is left for dogs to eat. During the evening, children continue this same practice or simply defecate on the floor in the house, which is cleaned the following morning. The common practice in Timor is for children to defecate wherever it is most convenient and begin to use the toilet on their own when they reach an age where they become embarrassed to defecate in public (usually by the age of 8). It is not common for a mother to 'potty train' a child. A minority of respondents stated that they would accompany their young children to the toilet both during the day and at night.

An overwhelmingly majority of respondents stated that their family latrine was not shared with other households. The 4 out of 27 respondents who did not have a latrine, stated that they either went to the river or the coffee forest to defecate. Based on observation, interview teams had doubts about whether people would actually make the effort to walk to these two locations away from the house rather than simply squatting near some brush close to their home.

FGD participants stated that if fetching water was difficult, families would choose to have a dry latrine rather than using water after each use. The common practices of children defecating inside the home and allowing animals such as pigs, dogs and chickens inside the house creates serious hygiene risks. Through observations during in-depth interviews, young children often crawled around on the floor with these animals and the animal fecal matter. In TIPs, nine out of 10 women tried making a homemade potty, filling it with ash for their child to defecate in, and then disposing the feces in the latrine. All mothers tried this behavior only during the evening and stated convenience and reduction of smell the major benefits to this practice. Mothers liked that homemade potties were easy to make, use and clean. Mothers showed no concern about fecal matter sitting in walkways or inside the house.

Discussion and Possible Follow-up

BCC could encourage mothers to put all feces in a latrine and keep animal feces out of walkways and children's play areas. TIPs results found mothers willing to use baby potties at night, but use of potties day and night for young children should be promoted. BCC could focus on all adults and children over four using latrines consistently.

Hand Washing

There were inconsistencies in answers about hand washing. Mothers, grandmothers and fathers were asked about how often they wash their hands with soap during the critical hand washing times: after going to the bathroom or contacting feces, and before eating, feeding or cooking. At the end of this series of questions, respondents were asked how many times in one day did they wash their hands, and the responses were always inconsistent with their preceding responses. Most mothers said that during these five critical times of hand washing, they usually wash their

[10] Only respondents from Durucai stated that they defecated above the pig pen, which the pigs would then consume.

hands. Although five critical hand washing times occur several times per day, 14 out of 21 respondents on hand washing stated that they washed their hands only two to three times per day[11]. Several of the respondents said they washed hands with soap when it was available, although they often did not have soap, or were so anxious to eat and continue on with their other daily activities that they washed hands without soap. Respondents from FDGs also stated that hand washing occurs when they remember, but most often they forget. Some respondents stated that they did not have soap or money to buy soap[12]. Mothers felt that their busy daily activities prevented them from washing their hands during critical times. Mothers in FGDs stated that it was their responsibility to wash young children's hands, while older children should know to do this on their own.

Key informants indicate that after defecation, people clean themselves (and sometimes children) with their hand, using water if it is available.

Discussion and Possible Follow-up

Hand washing with soap after contact with feces appears to be a very important practice to promote, although achieving rapid change does not seem likely. A helpful next step might be to identify "positive deviant" families that do regularly wash hand with soap and to learn from them why and how.

Treatment of Water

The majority of respondents treat water before drinking it. Twenty-three out of 26 respondents stated that they treat water through boiling[13], and 22 of these respondents filter water in addition to boiling. Water for cooking is not treated. Reasons for boiling and filtering water from FGDs and in-depth interviews include to remove dirt and kill bacteria. Drinking unboiled water could result in diarrhea, itchy throat and cough. Twenty-three respondents fetch water with plastic containers which are covered if the tops are available. Untreated water is stored in the kitchen and treated water is stored in a bucket with a top inside the home. Nineteen out of 26 respondents dip a cup into the bucket for drinking.

After trying solar disinfection (SODIS), one mother stated that the greatest benefit to her from this practice was the time saved from collecting firewood. Her children normally get sick from drinking unboiled water, but after drinking SODIS water, her children had no problems. Mothers who tried SODIS were easily able to recall the time periods during direct and in-direct sunlight to kill bacteria. A few water bottles were provided to mothers to try SODIS though not enough to accommodate a family's full water consumption needs. Although bottled water is sold at all kiosks around the country, the price of these bottles and the quantity in which they are needed to maintain an adequate supply of drinking water is the major barrier to practicing SODIS.

Discussion and Possible Follow-up

Most families boil their drinking water and also use a cup to retrieve the treated water. It would be useful to conduct addition qualitative research (primarily observations) on the retrieval of drinking water as this

[11] Inconsistencies in answers about the frequency of hand washing also made it difficult for interview teams to negotiate regular hand washing when the majority of respondents stated that it was regular practice during critical times. The recommended practice of using ash or sand as a cleansing agent was eliminated after consultation with MoH.

[12] Soap in East Timor is sold at all kiosks around the country for 10 to 20 cents each.

[13] 2 out the 3 respondents that did not boil water or sometimes boiled water, are from Ducurai.

could have a high possibility for contamination. The issue of wood consumption for boiling should also be assessed. Finally, it would be useful to conduct additional trials of SODIS at the community level to learn if people are willing and able to obtain bottles and use this alternative to boiling; or programs should consider providing appropriate bottles for SODIS as a useful step towards reducing the consumption of fire wood.

Advising Others

Respondents from in-depth interviews and FGDs all stated that mothers have primary responsibility for direct care of a young child, whereas fathers have more supervisory roles. As heads of their family, fathers stated that their main responsibilities were providing food for their family, making sure that their children go to school, and giving advice to their wives about how to care for their children. All fathers stated that they always give their wives advice on what actions to take when their young children are sick and support decisions to take a sick child to a health facility and for immunizations. Grandmothers play a more peripheral role in caring for young children. The majority of grandmothers stated that they were not involved in taking their grandchildren to the clinic for immunizations or when they were sick, although they often gave the mother encouragement.

There were no consistent responses regarding who cares for children under five when the mother is not at home. Most fathers stated that when their wife was not in the home, they would take care of the children under five, and most grandmothers said exactly the same thing. The majority of mothers stated that their older children or sisters taking care of the children under five when they are out of the home. It is interesting to note only a few mothers mentioned their husbands or mother/mother-in-law as being the caretaker when they were out of the home.

In regard to young child feeding (in Bobonaro), when asked directly from whom they had received advice, many women stated that no one had influenced them (15 of 36), that their family or friends (especially mothers and grandmothers) had influenced them (10 of 36, mostly in the 0 – 5 interviews), that they had received advice or participated in an class from NGOs such as CARE, Timor Aid, and CCF (10 of 36), or that they had been advised about child feeding by health workers such as the midwife, nurse, or doctor (6 of 36).

Willingness to give advice on feeding to other mothers seemed to be highly related to the economic condition and social status in the community. Poorer women were afraid that they would be perceived as proud if they tried to share new information with anyone. "…the economy of our family is not enough, so it is difficult for me to explain about this." "If I tell them about what I'm doing, they will just think 'Why is she acting like a rich person?' But if they ask me, then I'll tell them. In the future, once I've had experience and seen results, then I'll feel more confident to discuss it with others." "I'm afraid to explain what I've learned from TAIS because the others will think I'm proud." "I probably won't share this information with anyone. I already know for myself, and that's what's important."

Nonetheless, most mothers who were shy to share information themselves suggested that the TAIS team should expand the program to other mothers and other areas, because it was important information for mothers and children. They suggested that it would be better to organize a community meeting or mothers' group, which they considered a more appropriate

way to share information on child feeding, and they also thought it would be more appropriate for the information to come from health staff.

About half of the mothers (17 of 36) had already shared the information from TAIS with their female family members or neighbors, or planned to in the future. “It’s important for other people to know about this. I already know a little, but some people don’t know enough so we have to help them.” “I’d like to let my friends know so that they can understand and will want to do the same thing.” One mother of good standing in her community (who lived in a nice home and whose child had recently won a “healthy baby” competition sponsored by CARE) had already spoken with the wife of the xefi suco about organizing ways to share the information with other mothers in the community.

Many of these mothers had shared the information with their neighbors because the neighbors, having seen the TAIS team visit, were curious. Some community members expected that a food distribution would accompany the interviews. “Some of my neighbors were upset that they hadn’t been chosen for an interview because they thought that a program would follow.” One woman’s neighbor said, “They came to let us know about this, but what are they going to give us?”

The majority of mothers seemed more motivated by information from health workers (including the TAIS CC team), especially individual counseling, than they were by information from each other. “I like your suggestions because they come from a health worker, so I feel motivated about my child’s health.” One participant’s aunt became angry with her when she told her about the TIPs experience. The two women had worked together in the cooking classes at the local school, and the aunt scolded her, “Why did you wait until now to try those things? You already learned it in the classes at the school!” A couple of women felt very strongly that they were not interested in receiving advice from within their community, as one said, “because I already know from my own experience.” The other said “I only want to get advice from health workers, not from my neighbors.” Both of these women were in the same village (in Ai-Assa), so this sentiment may be due to some particular social dynamic within that community.

Discussion

As the head of the household, fathers are also in a strong position to influence practices in their families. Some BCC on child health and nutrition should be directed to fathers. Some mothers’ lack of confidence in advice from other mothers should be considered by the Family Health Promoters Program. It would seem to be important that the Program take steps to make the promoters credible, like ‘health workers’.

Community Leaders’ Role in Young Child Health

Community leaders who were interviewed included xefi sucos, xefi aldeias, religious teachers, school teachers, priests and a mother superior. Xefi sucos, aldeias and school teachers are not directly involved in the health of their communities. Xefi sucos and xefi aldeias perceive their role mainly to be involved in conflict resolution. Religious leaders have a more active role in health as opportunities during mass and religious classes are used to distribute health messages. These health messages include announcements from the health facilities or information about family planning for young couples that are about to marry. Despite not having a direct role in the health care of their communities, several community leaders in sucos with poor access stated that

they have made efforts to increase health access. This includes contacting the government to see if a health facility can be set up in their community.

Discussion

All community leaders and the majority of fathers were open and interested to talk about health topics within their homes and communities. Community leaders are in a prime position to promote new behaviors within their communities.

Access and Use of Health Services

Ermera District: Several respondents in sucos where CHCs were not located stated it was closer to walk to a health facility in a different district than to the closest CHC within their district. These respondents also stated that according to the health facility regulations, people are not allowed to access health services outside of their district. Community members could receive medicine for common sicknesses outside of their district, but ANC and immunization had to be done at the health facility within the proper district. This is not MoH policy, so apparently there is a miscommunication or misunderstanding from the DHS level to the health facilities or from the health facilities to community members. This issue needs further investigation as it directly affects community members' access to health services.

All respondents stated that if their child were not cured after going to the health facility the first time, they would go back again. Several respondents stated that if after two to three visits, the child was not cured, they would try traditional treatments and then possibly go back to the clinic (or visit more than one clinic in areas where there were Café Timor clinics in addition to government clinics). According to FGD participants, if clinic visits are not effective, they try other methods such as prayer over dead ancestors' graves in case these ancestors could have caused the child to become sick.[14]

Although several respondents mentioned long waits, short operating hours and sometimes harsh treatment by clinic staff, the majority of respondents were satisfied with clinic visits because they received medicine. Receiving medicine was the most important part of the visit to the health facility. Several respondents also mentioned that they were unsatisfied with the small amount of medicine given out at one time as they had to walk long distances to get to the clinic. Respondents from all six FGDs also stated that their main source of health information is health facilities.

Responses on access varied, based on the community's distance to health services. In the three sucos that were selected based on their proximity to a health center, all respondents mentioned that access to health care was easy and that they frequented health services on a regular basis. In the three sucos that were chosen based on their long distances to the closest health facility and poor roads, the majority respondents stated that although they were satisfied with their visits, their access to health care was difficult. The long walking distances are even more difficult for pregnant women and older people who have been ill for a long period of time, which results in less use of health facilities as well as longer intervals between visits.

[14] The most common reason for this was that parents had chosen the incorrect name for their child, so dead ancestors were arguing amongst themselves about the correct name of the child.

Out of the six sucos in which the CC activity was conducted, suco Ducurai had the most difficult access, not only to health care but also to education, church and market.[15] The issue is not the quality of the road from Haupo (the nearest town with a clinic/school/church/market) but rather the long distance and the absence of public transportation to Ducurai. Café Timor has a monthly mobile clinic in suco Libululi, located outside of Haupo, although no respondents mentioned accessing this mobile clinic[16].

Although there were differences among all communities with regard to access to health services, suco Ducurai is starkly different from the other five sucos. One mother of four children from suco Ducurai stated that the last time she accessed a health facility was two years ago in Maubisse at the nuns' clinic. Four out of seven respondents in Ducurai stated that they do not access health services regularly, while the other three respondents occasionally access health services. Short operating hours require community members in the poor-access sucos to sometime start walking before dawn in order to arrive at the health facility at an early hour to avoid long waits and to guarantee a consultation before closing.

All community members in these three sucos asked about the possibility of mobile clinics in their sucos. Community leaders in these sucos described the poor maternal and child health status within their communities, along with the common occurrence of maternal deaths due to poor access to health services.

Table 7. Access to Health Facilities in Ermera District

Suco	**Closest Health Facility**	**Walking Time**	**Availability of Transport**	**Road Condition**
Talimoro	CHC Gleno NCBA Clinic CHC Ermera	30 minutes 30 minutes 50 minutes	None	Difficult due to river Good
Maubu	CHC Ermera Cafe Timor Mobile Clinic[17]	2.5 hours 30 minutes	None	Poor Difficult during rainy season
Hatolia	CHC Hatolia	30 minutes	Infrequent	Poor
Ailelo	CHC Hatolia Health Post Biblibau, Bobonaro	1.5 hours 30 minutes	Infrequent Infrequent	Fair Fair
Haupo	CHC Letefoho	10 minutes-3 hours	Infrequent	Fair
Ducurai	CHC Letefoho Café Timor Mobile Clinic	3 hours 2 hours	None None	Fair

[15] Ducurai has a primary school, but middle and high school students must walk to Haupo. This is also true for church services and market.
[16] Participants at the district level dissemination of CC results, mainly health staff, stated that respondents may have lied during interviews in hopes of receiving material goods or a clinic in their suco.
[17] Respondents said the weekly Café Timor mobile clinic has become infrequent and unreliable due to the ongoing security situation in Ermera.

Like the CC (on child health topics) in Ermera, the CC in Bobonaro district (on nutrition topics) also gathered information on access to health services. The majority of pregnant-mother respondents seemingly accessed health facilities for antenatal care regularly, regardless of distance to the closest health facility. Only one woman mentioned distance as being a barrier to antenatal services, but in addition this respondent was worried about the treatment she would receive when she got there. Only one out of 18 mothers interviewed planned to give birth in a health facility. All other mothers planned to give birth at home. They did not mention distance as being a barrier for this, but more so their cultural practice and comfort and privacy of being able to birth in their own home as the motivation for home birth.

Bobonaro District: Respondents overwhelmingly stated that they would rather seek care from the health facility rather than from a traditional healer *(dukun*). The main reasons for this were that traditional healers always ask for payment and may lie about sicknesses to increase their payment. Other reasons for choosing health facilities included not being able to receive modern medicine and doubtfulness about the effectiveness of a traditional healer's ability to diagnose sickness and treat effectively. This is consistent with information from the FGDs that women prefer care from a health facility more than from a traditional healer. Interviews with pregnant women revealed that women want and make use of both services. It appears that women are more willing to go to ANC if there is good access to the clinic. However, it appears that women will use a traditional healer for unplanned illness or problems. It appears that the appointment system is strongly adhered too and that women are not encouraged to seek health care outside of their allocated review or check-up. A few women reported being turned away when they went for an un-scheduled check-up or if something out of the ordinary happened during pregnancy, so they feel uncomfortable going to a clinic unless they have an appointment and therefore seek traditional treatment.

Table 8 summarizes information from Bobonaro district (on nutrition topics) on access to health services.

Table 8. Access to Health Facilities in Bobonaro District

Suco	Closest Health Facility	Walking Time	Availability of Transport	Road Conditions
Purugua	CHC Marco Health Post	1.5 hours 20 minutes	Infrequent	Poor
Manapa	CHC Marco Hospital Maliana	2-3 hours 1-2 hours	Infrequent	Poor
Rita-Bou	Hospital Maliana Mobile Clinic	30 minutes -3 hours 15 minutes	Frequent	Fair
Aiasa	CHC Bobonaro	1-2 hours	Infrequent	Poor Difficult in rainy season
Bobonaro	CHC Bobonaro	5 minutes -1 hour	Frequent	Good
Batugade	CHC Balibo Health Post Batugade	2 hours (but most use transport)	Frequent	Good
Leolima	CHC Balibo Hospital Maliana	2 ½ -5 hours	Infrequent	Fair

Field Experiences

The interview teams worked extremely hard in learning new skills, traveling to communities, searching for respondents, conducting interviews and returning to the team base to expand and type field notes.

Because such qualitative research is not common in Timor, and many of the field team members had limited previous experience, achieving and maintain quality control was a challenge – but one that overall was successfully met. Interview teams showed dramatic improvements in interview skills from the training, to field testing and in the field. The skills of probing and note taking greatly improved, along with writing up field notes into a complete summary.

As with any research, the interview teams encountered certain challenges in the field. One of the major obstacles in the field was the shyness of respondents. Regardless of whether or not a foreigner was present during the interview, respondent often answered with silence, and various attempts at probing were ineffective. Some respondents were silent during certain sections of an interview, while others were extremely shy for the duration of the interview. In some cases, interviewers' efforts to get women to talk meant that they had to use "leading questions" with examples of possible answers.

Another challenge was the length of the interview guides. The majority of interviews took one to one and a half hours, with the exception of the interviews with community leaders. The guides also covered a large amount of topics. Towards the middle of the interviews, respondents often grew tired of answering questions and distracted, which had a negative effect on the interviewer negotiating TIPs with the mother. The interview teams observed what was possible before, during and after the interview but felt that it was inappropriate to ask respondents if they could enter their homes (including out-buildings such as kitchens and latrines), which they needed to do to fully utilize the observation guides.

In some cases when interviewers were supposed to do TIPs, there were no appropriate recommendations in the particular question guide. For example, if a child had reportedly received complete immunization and was not sick, there were no recommended behaviors. TIPs from the diarrhea question guide were sometimes difficult to negotiate with mothers as their responses were often inconsistent or observations contradicted responses. For example, interview teams found it difficult to negotiate hand washing with the mother when she said that she washed hands during critical times, despite her contradictory answer of washing hands twice in one day. When probed further about the contradiction, respondents often became irritated, scaring and preventing the interviewer from asking further questions on this topic.

Lastly, there were several instances of miscommunication with community leaders at the initial visits prior to commencing the CC activity. This occurred in three out of six sucos. Three weeks before the activity, TAIS staff delivered letters and met with community leaders in each suco to describe the objectives of CC and ask permission. When the teams returned to conduct the CC, community members were under the impression that the team members were doctors coming to do consultations. In two sucos, mothers even waited at the community centers with their babies and LISIOs. Certain xefi sucos could have misinterpreted the initial CC visit from TAIS. The

field team also received feedback that community leaders often distributed false information to prevent community members from going to the fields and insure that people would be at home to be interviewed.

Despite these challenges, the CC teams had many successes, from improvements in interview and note-taking skills as well as in their ability to motivate and negotiate with respondents to try new behaviors.

Discussion and Possible Follow-up

TIPs represents a new paradigm in Timor-Leste, and conducting effective TIPs interviews requires time and supervised practice to master. Nonetheless, the team's improvement over time gives hope that the approach is feasible, and the mothers' willingness and ability to try and like new practices are encouraging.

Given time and support from the MoH, TAIS could explore the future possibilities of conducting CC in eastern districts and with different geographical characteristics. The other possibility is to conduct a few FGDs in the east to present basic findings from the CC, then ask participants about the extent to which they are applicable in their communities.

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Annex 1: FGD Report

Background

In 2006, TAIS completed a situational assessment of key priority child health behaviors in Timor-Leste. This consisted of a literature review and key informant interviews. Focus Group Discussions (FGDs), the first step in the second phase of this learning process, were conducted between January and March 2007. TAIS's objective in conducting community-based, participatory FGDs was to gain a better understanding of *context* for health behavior change, including such concepts as health prevention, feelings of control and ownership over health, specific family members' roles, child care responsibilities and child feeding practices.

After analyzing the results of the FGDs, TAIS revised the guidelines for the in-depth interviews in collaboration with MoH. The findings from the FGDs will lead to the next phase of this research process: in-depth interviews, which will investigate in greater details families' beliefs and practices regarding child health and nutrition; and Trials of Improved Practices (TIPs) in which mothers' current perceptions and practices will be assessed, "improved" practices to try for a trial period will be negotiated, and then mothers' experiences and feelings will be reviewed in detail in a follow-up interview.

Community Consultation Process		
Situational Assessment → literature search and key informant interviews	Formative Research → FGDs → in-depth interviews and behavioral trials	Strategy Formulation followed by work plans, implementation, monitoring and evaluation

This report summarizes the organization, conduct, and results of the FDGs. Following the body of the report, Annex 1 describes the organization and experiences of various discussions; Annex 2 summarizes participants' comments by theme; and Annex 3 provides the question guides.

Methodology

Eight FGDs were conducted within existing community groups in five districts (Baucau, Aileu, Manatutu, Same and Dili) between January and March 2007. Each FGD was conducted in Tetum by one Timorese facilitator and one note-taker. In all cases, there were one or two foreigners (malae) present who helped ensure that all topics were covered and asked probing questions when appropriate. It was felt necessary to minimize the role of malae in order to encourage free discussion, because many of the FGDs were conducted with rural participants who were unaccustomed to malae presence. FGDs, each with 12 to 22 participants, were conducted with existing community groups. Below is a description of the FGD locations and criteria, based on access to health services and group composition.

	Cribas, Manatutu *Good Access*	Metinaro, Dili *Good Access*	Umamuli, Manufahi *Good Access*	Lehane, Dili *Good Access*	Uabubu, Baucau *Poor access*	Fahisoi, Aileu *Poor Access*	Namusoi, Baucau *Poor Access*	Fatulia, Baucau *Poor Access*	Totals
Young Mothers		X	X					X	3
Older Mothers						X	X		2
Grandmothers					X				1
Fathers				X					1
Mixed	X								1
									8

Field Experiences

The success of each FGD depended largely on the facilitator's skills. Although valuable information was obtained from the discussions, there was little consistency among the facilitators of the various FGDs. This could have impacted on the completeness and reliability of the information obtained. For example, one facilitator from MoH/TAIS was far more experienced than the facilitators from the local non-government organizations (NGOs). This facilitator understood the concept of a "focus group" discussion and the necessity for equality within the group. In terms of familiarity with the FDG guides and for comparison and analysis purposes, it would have been better to have the same facilitator and notetaker for all the FGDs. This was not possible due to the time constraints of MoH, TAIS and other NGO staff.

There were some challenges in limiting groups to grandmothers or young mothers only. This was because the organizers, for ease of organization, arranged for the FGDs to take place within existing groups before they began their normal group activity. Even though it was explained prior to the FGDs that only young mothers or older mothers, for example, were required for the discussion, the groups that arrived for the FGDs generally consisted of a mix of older and younger mothers and grandmothers, often with children. Men who came to participate in the mothers' FGD were politely told that the FGD was for women. The presence of children was challenging because the mothers were distracted and lacked attentive participation. Many of the participants had walked a number of hours to attend the group, and for this reason the facilitators felt it was inappropriate to ask them to leave even though they did not strictly fit the criteria for participants. The facilitators appreciate that this could have impacted on some key findings being drawn out.

The facilitators felt there were several advantages to using existing community groups for the FGDs. Local NGOs[18] were contacted in an attempt to assure active participation within the FGDs and to reduce the burden of recruitment. Many of these groups did align with the sampling criteria for the FGDs. Also, taking into consideration that Timorese are shy and take time to open up and speak freely, it was felt that participants within an existing group would more likely to feel at ease with each other and be more comfortable talking within a group of people they were familiar with, rather than a group of people who had never met each other.

[18] HIAM Health, Knua Buka Hatene, Feto Foin Sai Timor Leste and a community group formed by Concern

There was also interest from local NGOs to accept the opportunity to hold a FGD in order for them to gain a better understanding of health issues within these communities. Community group leaders welcomed the opportunity to talk about health topics, as the majority of groups were not health groups. At the end of the discussions, over snacks, many people took advantage of the opportunity to ask further questions about health- related subjects. It is widely accepted that health counseling is not a skill that medical staff and nurses carry out well in Timor-Leste. Therefore having a person who was able to talk in detail about health-related subjects in an environment in which mothers feel comfortable was useful for participants. Building the capacity of NGOs on health-related topics and demonstrating the utility of FGDs in obtaining information could be of long-term benefit to the NGOs. Lastly, using an existing NGO facilitates revisiting the participants to discuss findings.

The participants may have had more health knowledge than typical rural mothers on such topics on immunization and colostrum through their contact with local NGO network staff from Dili. It is possible also that existing relationships within the group and with the facilitator could have affected the FGD results and participants' willingness to speak freely. The current security situation dictated a slight modification in the planned sampling plan, when a grandmothers' FGD scheduled for Same was cancelled due to ongoing security concerns.

Technical Guide

The guides worked well and facilitated a natural flow from one sub-topic to the next. Once the facilitator had studied and practiced using the questions, the guide could be used as intended, as a guide to facilitate discussion. From the answers obtained during the FDGs, it was felt that the guide was appropriate to use in communities, in particular with women, in Timor-Leste.

Despite efforts of the facilitators to get comments from all participants, some members did not respond even when questions were directed towards them alone. They generally appeared attentive, although some drifted off in concentration or paid attention to other things. If the facilitator attempted to direct a question at them, they usually gave no response and stared blankly at the questioner. In every FGD there were participants who were more participatory and vocal than others. In all instances the facilitators were able to regulate the input of these participants in order to avoid their totally dominating the discussion.

Findings

Certain sections of the guide solicited consistently similar answers within all FGDs, irrespective of district and levels of access to information on health matters. For example, in general responses on woman's daily activities were similar: it is generally the sole responsibility of the mother to care for sick children or take them for consultations at the clinic. In contrast, there were other topics on which there were wide variations in experiences and beliefs, as outlined below. These FGD findings have also been arranged into a chart that allows easy identification and cross-referencing of themes[19]. Categories are broken down into specific areas such as complementary feeding, food security and ancestral beliefs about child sickness.

[19] Please refer to Annex 2.

1. Breastfeeding

Most FGD participants agreed that breastfeeding is widely practiced. There are varying practices regarding use of colostrum, depending on women's access to information on the benefits of colostrum from nursing or other health staff. The prevalent traditional belief is that colostrum is bad and particularly older women do not support its use. If older women, traditional birth attendants, or grandmothers are present at the birth or afterwards, it is unlikely that the mother will give colostrum. Influencers do encourage and support breastfeeding, but generally women start immediately only if they birth in a health clinic. The typical practice is for women to initiate the child on pre-lacteals of hot water and then "wait" for the breast milk to come. Generally, breastfeeding on demand (not necessarily exclusive) lasts for 3 months, and then mothers initiate complementary foods such as rice water, porridge or formula. The main reason cited why women commence additional foods is that breast milk is not enough to sustain the baby.

There is a belief that the mother's health impacts on breast milk production and quality. Many believe that if a woman does not have enough to eat, she will not be able to feed her child with breast milk.

Many women believe that breast milk sometimes goes bad and causes child sickness. Breast milk can go bad as a result of coming into contact with a 'bad wind' (*anin at*). When this happens, it is firmly believed that formula is better milk for the baby.

There is a strong view that a mother's sickness will be passed on to her child through breastfeeding. Therefore, when a mother is sick, she stops all breastfeeding and feeds her baby formula until she is feeling better.

There is also a strong belief that a child crying means that it is hungry and therefore needs food in addition to breast milk. People seem to believe that there could be no other cause of a baby crying.

Discussion

The breastfeeding results clearly reinforce the need for TAIS, the MoH and other partners to work on implementing the IYCF guidelines. Mothers are not exclusively breastfeeding for 6 months and are introducing complementary foods too early. There are many false beliefs that lead to temporary or early supplementation and/or use of formula. Key messages and IEC materials need to be developed to counteract these beliefs. There is also a need for increased promotion of exclusive breastfeeding at the community level. Efforts need to be made at both the national and community level with intense participation from community members. Discussions should be held at the community level between community members and health staff to deal with this issue.

2. Food Security

Delayed and low levels of rain have impacted on harvests, along with the continuing security situation in Dili, has impacted on rice/food security. After a period of rice scarcity, rice shipments have recently entered the country at increased prices. Although cassava and corn are staples, rice is an integral part of a Timorese diet. There is no substitute for rice: if rice has not

been consumed as part of their meal, Timorese will tell you that they have not eaten. With the current rice insecurity, food security was of great concern to participants.

Water consumption and access to water was also addressed in the FGDs. Similar to food security, water is an ongoing concern in areas of poor access. Although the majority of participants stated that men will also fetch water, water collection is generally a women's activity. In communities that have poor access to water, fetching water is one of the most time-consuming activities in a woman's day. The time and distance involved in getting water to the home greatly impacts on hygiene behaviors in the home, especially with regard to hand washing and using a latrine. People who have to walk long distances to fetch water will not give priority to washing hands before eating or feeding their children and will chose to have a dry latrine.

Discussion

There are possibilities for closer coordination between the MoH and the Ministry of Energy on rural water and sanitation projects and hygiene promotion at the community level. TAIS could research more deeply into the cultural ideas/perceptions about rice and the importance of rice in a diet and its relationship with young child feeding and food combinations. The guides can be revised to include additional questions in this area.

3. Traditional Beliefs

The FGD findings indicate that traditional beliefs surrounding health and feeding practices require further investigation and that the in-depth interview guides should include probes on these beliefs. There is a consistent, common belief that child sickness is caused when adults/parents anger ancestors. This perception explains child sickness without assigning the responsibility to the parents for the illness. It appears that although parents acknowledge their behavior, they align their behavior with something going wrong. They are rarely associated with poor hygiene practices. For example, a young child become sick if somebody did not contribute a goat when a family member died or the mother's cannot produce breast milk because the dead grandmothers are arguing about what the child should be named. People associate the quantity of breast milk with a dead ancestor's happiness and remain unaware that the child sucking on the breast stimulates breast milk production. *The link between prevention and sickness exists but with an overlay of traditional beliefs.* There was a consensus on a clear distinction between God and ancestors. God has a strong role in controlling destiny, although he does not cause child sickness, whereas angry ancestors can definitely cause serious sickness[20].

In addition to beliefs about ancestors causing child sickness, there were three other traditional beliefs about the causes for child sickness were mentioned in the FGDs: a child tripping and falling down, a 'bad' wind (that carries negative energy) and dirt. Consequently, a child can simply fall down or be touched by a bad wind and get severely sick. A child who receives a 'bad'

[20] Cuban doctors seem to be furthering the belief that sickness is caused by angering ancestors. Cuban doctors are asking mothers to return home and repair home relations within the home before receiving modern medicine at the clinic. Whether or not the Cubans are actually withholding medicine, the perception is real. This needs to be investigated further. This was mentioned by several participants in the FGDs in Baucau.

wind will immediately get sick. When children play in dirt, the mother will hit and yell at them because that will cause sickness.

Discussion
These topics should be further investigated during the in-depth interviews.

4. Access to Health Services
Respondents consistently mentioned that the first course of action when a child is sick is to take them to the clinic. Thereafter if modern medicine does not cure the sickness, it is then attributed to ancestors. Generally a traditional village healer is then accessed. There was no linkage between following health staff's instructions for taking medicines or how poor hygiene behaviors prevent a child from getting better. If a traditional healer does then not cure the child, the parents will take them back to the clinic. There appears to be a constant back and forth movement between modern health facilities and traditional home treatments (either with or without the assistance of a traditional healer) until a child is cured.

Discussion
Strongly embedded cultural beliefs influence people's practices. Health service providers, NGOs and MoH need to gain a greater understanding of these diverse beliefs, which can vary considerably from region to region. It is important that these beliefs are further researched in order to ensure that communicators, messages, and materials address, or at least are aware of, them. TAIS should discuss the option of expanding the number of districts in which in-depth interviews will be conducted in order to compare consistencies in beliefs but also identify differences.

5. Preventive Behaviors
There is a wide variation in knowledge about preventive measures to avoid illness. In FDGs with mostly older women, participants appeared to have no concept of prevention of illness. Younger mothers and fathers have general understandings of the necessity of washing vegetables prior to cooking, boiling water and sleeping under mosquito nets as preventative behaviors of illness. There are also traditional beliefs of disease prevention, such as not letting a child crawl around on the floor or play in the dirt or in windy areas. Although there is general health prevention knowledge, there appear to be large gaps between knowledge and practice. For example, a few mothers stated that "hand washing could prevent sickness," but also mentioned that they "often do not wash their hands because they forget." There appears to be low awareness about the preventive benefits of hand washing. Participants mentioned washing vegetables prior to cooking, but hands are not normally washed with soap at this time.

Discussion
There is a clearly a domination of curative rather than preventive behavior. Health promotion messages need to strongly address prevention. The in-depth interviews will investigate these practices and beliefs in further details.

6. Other Topics

Below is a synopsis of findings on other topics related to the context of health behavior change. Annex 2 contains a summary by community.

- **Food security**: rice is the main staple; many communities grow vegetables to sell and eat; poor rain this year affecting crop growth
- **Seasonality**: more illness present and more food available in rainy season
- **Health services**: generally positive attitudes and willingness to use for sick children and immunization; also use traditional remedies
- **Health information**: primarily from clinics
- **Health beliefs**: many folk beliefs on causes of illness, some of which affect practices
- **Economic activities**: predominantly agriculture
- **Gender roles**: men and women both work in agriculture; women also have many jobs at home and primary responsibility for children; fetching water is very time-consuming activity for women in some communities
- **Main illnesses**: participants voted more or less equally for malaria, diarrhea, stomach illness/worms

Discussion

One issue to keep in mind in recommending new practices to mothers is their available time. Particularly where mothers' spend substantial time fetching water, they are very busy, all day long. The variation in these contextual factors by community, and sometimes even by family, is a good reason to use a TIPs-like approach (assessment, counseling, negotiation) to ensure that recommendations are tailored and feasible.

Conclusions and Recommendations

The purpose of conducting these FDGs was to obtain general information about family members' knowledge of health and feeding practices, the amount of time mothers have for their children within their daily routine, and general opinions about child sickness. These discussions helped TAIS gain general information about practices and beliefs related to child health prior to conducting in-depth interviews. The FGDs also aided in preparation of the training materials and topics for the qualitative research training in May 2007 (to prepare the field team for the next stage of community consultation) and allowed for modification of the guides in collaboration with MoH staff prior to conducting the in-depth interviews. Interviews will be conducted in Ermera and Bobonaro districts on topics of general health and hygiene and nutrition. In addition to in-depth interviews, Trials of Improved Practices (TIPs) will be used to negotiate new practices with mothers to determine their acceptability, feasibility, and perceived barriers and benefits.

The findings from the FGDs will be incorporated into the analysis of the in-depth interviews and TIPs. These findings will be used to make recommendations for program development, such as counseling materials, and contribute to the BCC strategy development currently being outlined by the MoH.

[FGD report annexes omitted]

Annex 2: Members of the CC Team

Name	Affiliation/Roles	Team
Sarah Meyanathan	TAIS, technical team	Health
Tanya Wells-Brown	TAIS, technical team	Nutrition
Dorothy Foote	TAIS, technical team	Nutrition
Carlos Sarmento	TAIS, interviewer/note taker	Nutrition
Juliana Ernelia da Costa	TAIS, interviewer/note taker	Health
Santina da Cruz	TAIS, interviewer/note taker	Health
Silverio Soares	TAIS, interviewer, translator, and supervisor	Nutrition
Salvador Ornai Torrezao	HAI, interviewer/note taker	Health
Irene Babo de Jesus	SHARE, interviewer/note taker	Health
Marciana Maria Freitas	Alola Foundation, interviewer/note taker	Nutrition
Bernardo Soares	Haburas Moris, interviewer/note taker	Nutrition
Leopoldina dos Santos	Haburas Moris, interviewer/note taker	Nutrition
Rince Nipu	Haburas Moris, interviewer/note taker	Nutrition
Maria de Fatima da Rosa	Short-term hire, interviewer/note taker, translator	Nutrition
Umbelima da C Garcia Borges	Short-term hire, interviewer/note taker	Health
Elisa da Costa Oliveira	Short-term hire, interviewer/note taker	Health
Graziela Pereira Martins	Short-term hire, interviewer/note taker	Health
Ilda Anesia Soares	Short-term hire, interviewer/note taker	Nutrition
Leonilda da Costa Lopes	Short-term hire, interviewer/note taker	Nutrition

Annex 3: Summary of TIPs in Ermera District

Recommended Practices	No. of people asked	No. of people willing to try	No. of people who tried	No. of people who were able to carry out agreed practices	No. of people who plan to continue
ORS	9	8	2	2	2
Compress	5	5	2	2	2
Baby potty	11	9	8	8	8
SODIS	2	2	2	2	2
Hand washing	4	3	2	2	2
Total	**31**	**27**	**16**	**16**	**16**

Annex 4. Summary of TIPs in Bobonaro District

Recommended Practices	No. of people asked	No. of people willing to try	No. of people who tried	No. of people who were able to carry out agreed practices	No. of people who plan to continue
Make a birth plan	2	2	2	2	2 (intention but not yet delivered)
Give birth in a hospital	2	0	0	0	0
Try and remember to take iron tablets	1	1	1	1	1
Not to sit too close to fire after birth/or not to sit fire	2	0	0	0	0
Delay to wash baby	1	1	1	1	1
Put baby to breast for immediate breastfeeding	1	1	0	0	0
Try to give colostrum to newborn	8	8	6	6	6 (those who had not yet delivered intended to)
Exclusive breastfeeding for 6 months	4	3	3	3	3 (intention to)
Substitute other foods with breast milk feed	6	6	6	6	6
Increase amount of breastfeeds by 1-2 times when baby is sick. Feed longer on each breast	1	1	1	1	1

Recommended Practices	No. of people asked	No. of people willing to try	No. of people who tried	No. of people who were able to carry out agreed practices	No. of people who plan to continue
Increase amount of breastfeeds during night to 3+	2	2	2	2	2
For mother to be aware of how many times she breastfeeds per day and for how long. More than 8-10x is good practice and 10 minutes per breast	16	16	11	10	8
Stop giving the bottle; after 6 months give other fluids by cup & spoon	11	11	10	8*	8*
Wait until 6 mo to introduce complementary foods	3	3	3	3	3 (intention to)
Give variety of soft nutritious foods	15	15	10	7	7
Give larger quantity of foods	5	5	4	3	3
Give snacks	9	9	7	7	7
Give child their own plate & spoon	1	1	1	1	1
Feed more food when child is sick	2	1	1	n/a (child not sick for entire trial period)	1
Total	**92**	**69**	**62**	**62**	**61**

*Results of the follow-up interview with one mother were lost, so it is unknown if she carried out the improved practice.

Annex 5: Behavior Analysis Matrices

Key Behavior: Birthing practices
Participant Group: Mothers of children 0 – 5 months

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Birth with trained MoH professional or in institution/ clinic/hospital *NB. Desired practice by MoH Timor-Leste is for birthing to take place in institutions.*	Women are birthing at home with traditional birth attendant or assistance of family members. (7/8 out of 9) The two births that were in clinics/hospitals were because of difficulties during labour (one woman was birthing twins and one woman had a retained placenta)	Some women who live near a birth facility could birth or be encouraged to birth in an institution. Many women would be willing to give birth at home with trained midwife.	Accessibility – women said that it was too far to a hospital or clinic. Lack of confidence in the quality of skills of midwife. Women hearing stories about other people's birth experiences – i.e. being treated badly during delivery, or that a baby or mother had died while giving birth in a hospital. Lack of privacy HAI's formative research in 2004[21] found that families fear the mother dying away from home and the family having to pay an exorbitant fee to transport the body for burial HAI found that women do not like birthing in hospitals because they do not have appropriate clothes. One woman mentioned the fee associated having to pay for medicines from midwife and that midwife would be angry if they did not buy them.	No motivation identified because women interviewed had no desire to give birth in institutions, except in the case of an emergency

[21] Health Alliance International, 2004. Strengthening Maternal and Newborn Care in Timor-Leste: Focus Group Discussions, Aileu, Ermera, Liquisa and Manatutu Districts.

Behavioral Analysis Matrix

Key Behavior: Pregnancy, prenatal care and weight gain
Participant Group: Pregnant women

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Attend a clinic 4 times for routine prenatal check-ups that include receiving: Iron tablets Weighing TT vaccinations.	Most women have 2-3 prenatal check-ups. Women who have prenatal check-up are receiving iron tablets and taking them.	Women with reasonable access to continue to have 3 – 4 prenatal check-ups. Women who live in remoter areas would attend prenatal care if midwives visited sucos.	Sometimes midwives are not at the clinic because of short working hours or they have to attend training. Perception that clinic is too far away Perception that pregnancy is normal and it is not associated with danger Some women said they were too shy to go to the clinic and do not like having an examination. Perceptions of unkind treatment Many women stated that they did not have the time to attend clinic for pre-natal care because of having to look after the family or working or because access was too difficult.	Women like going for prenatal check-ups because they learn about the baby and receive vaccinations and iron tablets. Women like receiving information about their pregnancy from the midwife. Women like knowing that their baby is well positioned for birth.

Behavioral Analysis Matrix

Key Behavior: Postnatal care-seeking
Participant Group: Mothers of infants between 0 – 23 months and pregnancy women

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Within first few days after birth, women and newborns attend a health post or hospital for post-natal check-up.	Most women delay in postnatal check-up because women stay in the home, preferring not to leave for 1 week to two months. (FGDs and in-depth interviews, HAI) 2 of the women had births in hospital so received postnatal check-ups.	Many women would accept visit by midwife in the home for postnatal check-up. Where health post is accessible, it might be feasible to motivate some women to attend a clinic within the first month but not the majority of mothers.	Belief that they should stay in the home post-birthing (protection for the baby – baby must not get cold) Some women practice 'sit fire" – staying close to a fire with baby in the house. Very few midwives visit homes post-delivery. Women do not appreciate the importance of postnatal check-up.	Women like their baby to have vaccinations, to make him safe and prevent illnesses. Mothers can receive information about good baby care and family planning/birth spacing.

Key Behavior: Child sickness and eating habits
Participant: Mothers for children 0 – 23 months

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
If baby is sick, continue to give breast milk and feed baby more often. Keep trying to give a variety of nutritious foods if baby is over six months.	Most women said that they would continue to give breast milk during childhood sickness. Some women said they would stop giving other foods but continue to give breast milk.	Women will continue to breastfeed during childhood illness. Mothers with children over six months can encourage infants eat by giving a variety of nutritious foods. If baby is ill, mothers can feed more food to baby. Mothers could add oil to food to increase fat content; and can make foods thicker in consistency.	Sometimes it is difficult to feed a sick child because his appetite is reduced. Sometimes women do not have time to feed their child more frequently.	The more a child can eat after sickness, the faster he/she will grow again and get bigger.

Behavioral Analysis Matrix

Key Behavior: Making birth plans
Participant Group: Pregnant women & family

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Consider birthing options and make a birth plan that includes where mother will birth and what steps to take in an emergency	All couples planned home births 9/9 Births are discussed, but plans are not well formulated. Most couples have the general plan that in event of an emergency they will seek professional assistance.	Make birth plans covering several issues: i.e. transportation, how to contact midwife.	Some women felt they could not make a formal plan because it would cost too much money get to a hospital or clinic; and/or because they had no transport. Most women prefer to birth in the home – that is their plan. Perception that birthing is natural and not associated with danger so there is no need to make a plan Most women make comparisons with previous births, i.e. if one was okay then the next birth will be too, so there is no need to plan.	Women and men think that having a professional midwife present during labor could save the mother's and baby's life in case of complications. Making plans in advance can avoid more stress in a critical situation.

Nb: Most women are happy for a *daia* to attend the pregnancy.

Behavioral Analysis Matrix

Key Behavior: Immediate breastfeeding and colostrum
Participant Group: Mothers of infants 0 - 5 and pregnant women

Ideal Behavior	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Put the baby to the mother's breast to breastfeed within first hour after birth. Feed colostrum.	Most women delay putting baby to put to the breast for a few days because they think that breast milk does not start so straight away. Some women give hot water or sugar water to their newborn as the first food. Some women give formula if they have money and access to formula. Women think that breast milk does not come, so they give the baby to be wet nursed (5/9) or give prelacteal feeds (4/9) 8/9 pregnant women had plans to give their newborn to a neighbour to wet nurse until breast milk starts. Women commonly discard colostrum (7/9 pregnant women had intention of discarding colostrums in TIPs) Only one woman out of all interviewed put the baby to the breast immediately to give colostrum.	Women are prepared to put the baby to the breast within the first hour of the birth, if they are supported by midwife or if they birth in hospital. Women are prepared to delay bathing of the baby and start breastfeeding. With encouragement and information on colostrum, some women would give colostrum. Women are prepared to listen to information about the benefits of immediate breastfeeding and colostrum	Firmly entrenched belief that breast milk does not start straight away. Grandmothers, mothers, TBAs give information to the nursing mother that colostrum is bad ("dirty") for the baby. Women don't consider colostrum a form of breast milk. Some women discard very first colostrum because it is too cold. Some health professionals and TBAs or family members that assist with the birth do not believe or know about the benefits of immediate breastfeeding and colostrum. There is a tradition of waiting for the placenta to be born and tradition of cutting cord and then washing the baby (sometimes symbolic washing by grandmother), which delays putting baby to the breast. Belief that formula helps baby grow better. If formula is readily available, the respondents want to use it to supplement breast milk because it is easier if they are busy i.e. household jobs – they give formula in a bottle to stop baby from crying. Women do not understand that the more the baby breastfeeds the more milk is produced.	Women with more contact with health staff believe that immediate breastfeeding is good for the baby because they know about the multiple benefits of colostrum. Women like to have support from midwife or BF counseling to help them with breastfeeding. Women like to do something that protects their baby's health. Women who receive information about colostrum are prepared to accept that it is good for the baby and protects baby from illness and has lot of good nutrients. It is like that women would appreciate several benefits of immediate sucking (if they were aware of them), including ending contractions and bleeding more quickly and stimulating the breast milk (colostrum) to start.

Behavioral Analysis Matrix

Key Behavior: Exclusive breastfeeding for 0 – 5 months (thereafter breastfeeding with additional foods)
Participant Group: Mothers of infants 0 – 5 months

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Breastfeed exclusively for six months (no other food or drink) given to baby for six months	Most mothers start giving formula or other foods (rice porridge) at 3 or 4 months (FGDs and IDIs) Some women start immediately with formula and prelacteals	Many mothers can move closer to exclusive BF for the first 6 months.	Mothers do not think breast milk alone is enough to help the baby grow; don't understand that the more the baby feeds, the more milk they produce. Mothers perceive that the baby rejects the breast and therefore give early supplementary foods. Belief that formula makes the baby grow bigger and stronger. (n.b observation: babies fed on formula were big and strong) Formula and other foods can be given by somebody else so the mother can return to work in the field. Information passed on about breastfeeding practice from family, and that rice porridge should be started within six month period. Women read formula packets and the information states that it is ok to commence other foods earlier than 6 months.	Women can save money on formula and other foods. Women like receiving messages from health professionals about good IFYC practice and breastfeeding (in trials women willing to try to continue or move towards exclusive breastfeeding). Mother support groups, where they exist, motivate exclusive breastfeeding and help resolve any problems.

Behavioral Analysis Matrix

Key Behavior: Breastfeeding frequency – (day and night)
Participant Group: Mothers of infants, 0 – 23 months

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Breastfeed baby often during the day and night (exclusively until 6th month) 0-5 months, 10+/day 6-8 months, 8+/day 9-11 months, 6+/days 12-23 months, 4+/day	Most women breastfeed, when the baby cries and wakes up – "feeding on demand". All women breastfeed during the night. Women are not familiar with how often they breastfeed or the duration of feed.	Women are willing to try and breastfeed for longer and pay attention to the amount of times they breastfeed throughout day and night. Breastfeed more frequently and until both breasts feel empty.	Mothers are very busy during the day looking after other children and with doing household chores. Mothers return to work in the field at about three months.	It is good to breast feed as often and as long as the baby wants day and night. Women think that baby is more settled after long breastfeed i.e. sleep longer, less crying and they can do more housework.
Sub-topic: BF Problems	**Actual Practice**	**Feasible Behavior**	**Barriers**	
Women continue breastfeeding even if they develop problems. Seek BF counseling from midwife or MSG member.	About 3 women reported breast fullness as being a problem and declared relief on feeding. Women perceived not knowing when to breastfeed as a problem. 2/9	Women who experienced problems continued to breastfeed. Continue to use both breasts.	Lack of knowledge on breastfeeding problems Lack of skilled counselors to give advice on breastfeeding problems and when to refer to health care (HAI)	

Behavioral Analysis Matrix

Key Behavior: Introduction of prelacteal feeds and formula
Participant Group: Mothers of infants 0 – 5 months

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Breastfeed exclusively for first six months (no pre-lacteal feeds/formula)	Prelacteal feeds are often given (5/9 cases). Women think that breast milk does not start straight away so they "wet nurse" and/or give prelacteal feeds or formula. Most women exclusively breastfeed for about three/four months. (FGDs, IDIs, HAI) Other fluids/foods introduced at about three months (normally plain foods – rice water – sasoro). Depending on access to health promotion and educations about BF.	Some women could avoid feeding prelacteal feeds and formula and exclusively breastfeed for 6 months Most other women could improve practices, i.e. feed less prelacteals/ formula and then exclusively breastfeed for longer	Belief that breast milk is not enough so baby needs other foods. Grandmother encourages the new mother to give pre-lacteal feeds. Belief that breast milk is not sufficient when baby is 3/4 months old and that other foods should be given	Baby will be healthier with just breast milk for first six months. Women believe that babies who have formula and other foods are more prone to diarrhea.

Key Behavior: Bottle use
Participant Group: Mothers of infants 0 – 23 months

Ideal Practice	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Introduce other supplementary foods at six months and feed them with a cup and spoon (never give a bottle)	Most women do not use a bottle because it is too expensive. Women who live close to the market and are economically better off are more likely to use bottles and formula. 1/9 women used a pacifier	Use a cup and spoon to feed baby.	Bottle feeding associated with formula and formula is good for the baby's growth.	Women want the best for their baby's health so they will try to use a cup and spoon.

Behavioral Analysis Matrix

Key Behavior: Maternal diet and breastfeeding
Participant Group: Pregnant Mothers and Mothers with infants 0 – 23 months

Ideal Practices	Actual Practice	Feasible Practice	Barriers	Motivations and Supports
Eat a varied, nutritious diet during pregnancy and postpartum, including foods rich in protein. Drink lots of (treated) water.	Most women do not eat a varied diet after giving birth. Limited to simple foods like sasoro, blended corn, beans and chicken. During pregnancy some women avoid some foods (FGDs, HAI) Postpartum – fish is avoided in areas where fish is readily available. Many women avoid corn post-partum because they perceive it inhibits breast milk production.	Eat more nutritious vegetable and protein- rich foods. Drink more (treated) water.	Some food taboos - belief that some foods should be avoided during breastfeeding – that it stops breast milk production and are bad for baby. Most women have some specific taboos according to community or family beliefs. Belief that fish is not good for the baby during breastfeeding.	Most women think it is important to drink lots of water because it helps with breast milk production. The nursing mother is eating for herself and her baby so she needs to eat more food and water.

n.b. observation: most households had large corn supplies

Behavioral Analysis Matrix

Key Behavior: Give a variety of nutritious foods
Participant Group: Mothers of children 6-23 months of age

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Increase the amount of nutritious, calorie-dense foods (add DGLV, oil, nuts, egg, to the child's porridge)	Porridge (sasoro) is made from rice, and less frequently from corn, and is usually prepared with water only, sometimes salt, "Masako" (bullion powder), vegetable broth, or a little onion, to a thin consistency. Some mothers already mix porridge with DGLVs, other vegetables, and/or a little oil. Eggs and meat are only mixed if they are available. Sometimes mothers mix instant noodles with porridge to improve the taste. Timorese people normally cook and consume pumpkin while it is still white. If it is already ripe, they remove the seeds to fry, and feed the orange flesh to the pigs. A few mothers who can access and afford commercial porridges ("SUN" brand) give this to children as a first weaning food.	Mix orange pumpkin flesh or DGLV with the child's porridge, or with eggs or meat when available. Various DGLVs are generally available throughout the year even if home gardens are seasonal. (check seasonality of pumpkin) Egg is acceptable, even for younger children (6-8 mo) if it is available.	Distance to garden is sometimes far, takes time to gather vegetables. Vegetables are considered "hard" foods that are too harsh for a young child's stomach (6-8 mo). Lack of money to buy vegetables or egg (if the family does not have a garden/chickens). Quicker and easier to give plain porridge, since it takes time to get vegetables from the garden/market. Worry that giving vegetables with the porridge will make the child sick. Perception that rice and corn alone are enough.	Mothers report that children like to eat more when the porridge is flavored with something other than just rice (vegetable, noodle, egg, etc.). Mother's understand that mixing porridge with vegetables makes children healthy and their bodies grow well. Children who like to eat are full and can play without crying. Mother feels responsibility to prepare the best possible food for her child, even if it takes extra work (to be a good mother). The child will grow up to be a "smart person", to have a good future, and the mother will feel proud.

Comments:

- Adding oil and nuts was not specifically explored as part of TIPs. Dark green leafy vegetables (DGLVs), ripe pumpkin, and egg were more frequently recommended and/or tried.

Areas for further investigation/research:

- Since ripe (orange) pumpkin is normally fed to pigs, some women might find it inappropriate to feed to kids, but the one woman who tried feeding it to her 6-8 month old child was surprised by how much the child liked it and planned to continue giving this to her child.

- It is not clear what proportion of vegetables to rice porridge is considered appropriate, and it's likely that what women perceive as "enough" vegetables is actually a very small amount. Explore Timorese women's perceptions about the appropriate amount of vegetables to mix with porridge. This could be done in the context of NGO cooking groups (or perhaps via key informant interviews with NGO staff who conduct cooking classes and are likely already familiar with mothers' practices and preferences).

- Pilot in-home fortification ("Sprinkles") as a means to increase the micronutrient content porridge for all children.

Behavioral Analysis Matrix

Key Behavior: Give a larger quantity of food
Participant Group: Mothers of children 6-23 months of age

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Feed the child X* rice spoons of nutritious food at each meal. * 6-8 month old: 3 tablespoons 9-11 month old: 5 tablespoons 12-23 month old: 7 tablespoons	Children are normally fed 1-2 rice spoons of porridge per meal. Some older children (12-23 month olds) are fed 4-9 spoons of porridge per meal.	Gradually increase the number of spoons of food given to the child at each meal, to see how much the child is capable of eating, and trying to reach the recommended portion size.	If the child refuses to eat more food, the mother feels frustrated. Perception that child cannot eat more food. Concern that food will be wasted if it is prepared but not eaten. Concern that child will throw up (vomit).	The child will grow to be big, strong, and smart. When the "empty" porridge is mixed with something to give it flavor (from vegetables, noodles, "Masako", egg, etc.) it is easier to get the child to eat more. If the child is able to eat more, the mother feels motivated to feed more. The child who is full is able to play well by him/herself without crying, and mother is able to get more of her work done.

Comments:

- The number of tablespoons recommended per meal in TIPs was slightly different from the MoH Timor Leste recommendation but the subsequent volumes are similar for both recommendations (spoon based and cup based). The important finding from the CC was that some women were able to increase the amount of food the child ate, especially when the porridge was flavored with vegetable, noodle, 'Masako', egg, etc.

Behavioral Analysis Matrix

Key Behavior: Give snacks
Participant Group: Mothers of children 6-23 months of age

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Give X* meals and X* snacks every day. * 6-8 mo olds: 2 meals and 1 snack 9-11 mo olds: 3 meals and 1 snack 12-23 mo olds: 3 meals and 2 snacks	The number of meals given per day usually meets the recommendation. Mothers usually do not give snacks	Give the recommended number of meals per day. Give snacks between meals. Feasible snacks are those that are available in the home garden (bananas, oranges, pumpkin, ripe papaya, cassava, sweet potato) or those that can be bought from the kiosk or market (for those who can access/afford it), such as biscuits or donuts. Bananas and biscuits were the most popular snacks.	Some mothers do not have money to buy snacks. Women are not in the habit of giving snacks (lack of knowledge about this practice)	Snacks help the child to stay healthy and grow well. Mothers perceive that children like snacks. When the baby feels full, he/she doesn't cry as much and the mother is free to do her work. It is easy to give snacks of the things that grow in the family's home garden.

Behavioral Analysis Matrix

Key Behavior: Hand washing
Participant Group: Mothers with children under 5

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Hand washing with soap during critical times: after going to the bathroom or contacting feces, and before eating, feeding children or cooking	Hand washing with soap (or detergent) is rarely practiced Several respondents said they washed hands with water during some critical times 14 out of 21 respondents stated they washed their hands 2 to 3 times per day	More people can wash their hands with soap more often. If soap is not readily available, people can use detergent as cleansing agent (2 out of 4 family members tried this new practice)	Lack of money to buy soap Low levels of knowledge of benefits of hand washing Family members feel that their busy daily activities prevent them from washing hands with soap Difficulty in remembering to wash hands Belief that hand washing with water alone is sufficient	Hands feel fresh and clean Good for health (*Diak ba saude*)

Key Behavior: Treat mild fever and diarrhea at home
Participant Group: Mothers with children under 5

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Treat mild fever with tepid compress	10 out of 39 respondents already use a tepid compress to treat fever in the home 17 out of 30 respondents used 'traditional medicine'[22]	Use a compress (2 out of 5 mothers who had not tried it before, tried this new practice)	No stated barriers	Children are small Compress reduces fever quickly Easy to do
Treat diarrhea with ORS either from the health facility or made in the home	19 out of 39 respondents use 'traditional medicine'[23] to treat diarrhea	Make home made ORS (2 out of 9 families tried this new practice)	May not have sugar and salt in the home	'Stopped diarrhea quickly' Easy to make at home-supplies readily available

[22] Based on in-depth interviews, traditional medicine for fever usually consists of massaging the body with coconut oil and herbs (such as basil).

Behavioral Analysis Matrix

Key Behavior: Safely dispose of the feces of all family members
Participant Group: Mothers with children under 5

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Throw infants' and young children's feces into a latrine	Young children are allowed to defecate on the ground during day hours During the night, children either defecate on the ground inside the home or directly outside of the home Dogs are called to consume the fecal matter	Make a home made potty filled with ash that adults will dispose of in the latrine (8 out of 11 respondents did this in TIPs)	Use of potty during night hours only -- see potty's benefits as convenience Lack of understanding about preventative benefits of using potty Mothers' busy daily schedule prevents her from potty-training their children	Easy to make with readily available materials Reduction of smell Easy to clean Convenient during the night
Every family member over 3 years uses latrine during the day and night	Adults and older children use the latrine during the day and night		Latrine is smelly Flies	Feces are disposed of in one place Prevents sickness Prevents spread of flies

[23] Based on in-depth interviews, traditional medicine for diarrhea usually consists of making a tea out of fruit leaves and roots.

Behavioral Analysis Matrix

Key Behavior: Treatment of drinking water
Participant Group: Mothers with children under 5

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Treat water you are about to drink by boiling or solar disinfection	Majority of respondents treat drinking water through boiling and filtering either before or after boiling	Boiling water for drinking is common practice Treat water through solar disinfection (2 out of 2 families were able to do this new practice)	Time and cost of collecting or buying firewood Lack of bottles for solar disinfection Few hours of direct sun during rainy season	Boiling and filtering water prevents sicknesses like stomach aches and diarrhea Family members believe treating water is most important for young children Solar disinfection saves time from collecting firewood

Key Behavior: Bring children to immunization
Participant Group: Mothers with children under 5

Ideal Practice	Actual Practice	Feasible Practices	Barriers	Motivations and Supports
Bring children to immunization service delivery points at the ages recommended in the national schedule with immunization booklet, the LISIO	Majority of mothers take their children for complete immunizations (9 out of 12) at some point in time Delay in first immunization based on practice of 'staying in the home' after delivery for at least one month Delay in intervals between immunizations Many respondents could not locate their LISIOs (although mothers could remember place on body and number of times their child received immunizations)	Most mothers can take their children to get fully immunized	Lack of knowledge in remote communities about immunizations Lack of awareness of immunization campaigns Long distance to closest health facility Worry that mother and child could get sick by getting cold or a 'bad wind' if she leaves the house too early	Immunization prevents serious child sickness (22 out of 27 respondents) Support of other family members for the mother to take the child for immunizations Understanding of family members that mild negative side effects from immunizations are normal

Annex 6: Types of Traditional Treatments

No	Sickness	Traditional Treatment
1	Fever	1. Make chicken porridge for the child
		2. Massage the child's head and body with coconut oil
		3. Massage the child's body with cooking oil
		4. Breathe in the steam from boiled leaves
		5. Massage child with crushed leaves
		6. Bathe child with water boiled with lime leaves
2	Difficulty Breathing	1. Mix lime juice and sugar
		2. Call people to come and pray for child
		3. Massage child with cooking oil
3	Diarrhea	1. Massage child's stomach with ash
		2. Make a tea with boiled local leaves
		3. Make a tea with boiled black papaya roots
		4. Make a tea with boiled fresh papaya leaves
		5. Make a tea with boiled guava tree bark
4	Vomiting	No home treatments for this
5	No appetite	1. Mix lime and sugar
		2. Give fruit
		3. Make vegetable porridge
6	Cough	1. Mix honey, lime and 'sweet soy sauce'
		2. Boil cooking oil, lime juice and 'sweet soy sauce'
		3. Mix lime and cinnamon
		4. Boil local tree bark *(aidak)*
		5. Boil local vegetable *(angriaun)*